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(54) ELECTRONIC TICKET RECORDING MEDIUM AND PROCESSING METHOD AND PROCESSOR

(57)Abstract:

PROBLEM TO BE SOLVED: To generally define the various kinds of electronic tickets, and to safely issue, transfer and consume the tickets.

SOLUTION: A ticket ID 233, issue organization ID 237, ticket authority information 239, owner ID 234, issue condition 240, transfer condition 241, and consumption condition 242 are set in an electronic ticket, and an issue organization signature 235 for all of them is applied. A ticket schemer ID for designating the kind of a ticket which should be owned by each ticket transmission organization and reception organization is recorded in each issue condition, transfer condition, and consumption condition, and whether or not those conditions are fulfilled is verified in each stage of issue, transfer and consumption.
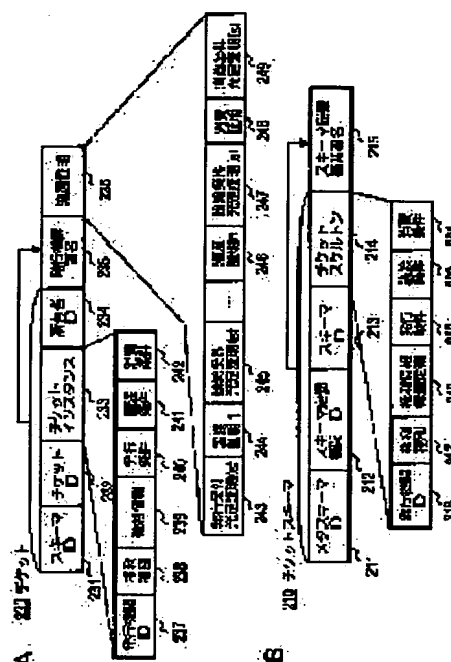
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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] The issue engine identifier which is the record medium with which the electronic ticket was recorded, and defines the identifier of the issue engine of the above-mentioned electronic ticket, The conditions of issuance which define the conditions for publishing the above-mentioned electronic ticket as the right information which defines the right information on the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned], The owner identifier which defines an owner's identifier, a signature of an issue engine, and ** are recorded, and the above-mentioned engine conditions specify the ticket which at least one side of the receiving engine which receives the above-mentioned electronic ticket, and transmitter Seki to transmit must own.
[Claim 2] In the record medium according to claim 1, the schema identifier which defines the identifier of the electronic ticket schema which defined the information structure of the above-mentioned electronic ticket is recorded.
[Claim 3] The issue engine identifier which is the record medium with which the electronic ticket was recorded, and defines the identifier of the issue engine of an electronic ticket, The schema identifier which defines the identifier of the electronic ticket schema which defined the information structure of the above-mentioned electronic ticket as the right information which defines the right information on the above-mentioned electronic ticket, It has recorded the account of **. The above-mentioned electronic ticket schema The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are included.
[Claim 4] In claims 1 and 2 or the record medium of 3, the identifier of the ticket schema which defined the information structure of the ticket which either [at least] above-mentioned transmitter Seki or the above-mentioned receiving engine has to own beforehand as the above-mentioned engine conditions is recorded.
[Claim 5] In the record medium according to claim 1, 2, 3, or 4, the condition sufficiency certification record proving having satisfied the conditions by which assignment was carried out [above-mentioned] is made.
[Claim 6] The right information structure which is the record medium with which the electronic ticket schema which defined the information structure of an electronic ticket was recorded, and defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and

the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 7] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the conditions of issuance of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is issue equipment which publishes the electronic ticket which has the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as conditions of issuance. The above-mentioned issue engine identifier Records Department of the above-mentioned electronic ticket, the above-mentioned right information Records Department, A means to record the above-mentioned issue engine identifier, right information, conditions of issuance, an owner identifier, and an issue engine signature on the above-mentioned condition Records Department, the above-mentioned owner identifier Records Department, and the above-mentioned signature Records Department, respectively, A means to verify whether the above-mentioned receiving engine owns the ticket specified as the above-mentioned engine condition definition section, and a means to transmit the above-mentioned electronic ticket to the above-mentioned receiving engine when verification by the above-mentioned verification means is filled are included.
[Claim 8] In the issue equipment of claim 7, the schema identifier which specifies the schema of the ticket which the receiving engine of the above-mentioned electronic ticket has to own is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket as the above-mentioned conditions of issuance.
[Claim 9] In the issue equipment of claim 7, the above-mentioned engine condition definition section of the above-mentioned condition Records Department contains further the schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned conditions of issuance, and the above-mentioned means which carries out verification includes a means verify whether the above-mentioned ticket of the schema specified by the schema identifier of the above-mentioned engine condition definition section exists.
[Claim 10] In the issue equipment of claim 9, when the above-mentioned issue equipment succeeds to the above-mentioned verification further including the conditions-of-issuance sufficiency certification Records Department for the above-mentioned electronic ticket to record the conditions-of-issuance sufficiency certification proving sufficiency of the above-mentioned conditions of issuance, a means to record conditions-of-issuance sufficiency certification to the above-mentioned conditions-of-issuance sufficiency certification Records Department is contained.
[Claim 11] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the transfer condition Records Department which records the transfer conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned transfer condition Records Department It is transfer equipment of the electronic ticket which has the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as the above-mentioned transfer conditions. A means to verify whether the ticket which the above-mentioned receiving engine specified as the above-

mentioned engine condition definition section has to own is owned, and a means to transmit the above-mentioned electronic ticket to the above-mentioned receiving engine when verification by the above-mentioned verification means is filled are included.

[Claim 12] In the transfer equipment of claim 11, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the ticket which the above-mentioned receiving engine has to own as the above-mentioned transfer conditions.

[Claim 13] In the transfer equipment of claim 11, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned transfer conditions, and the above-mentioned means which carries out verification contains a means verify whether the above-mentioned ticket which above-mentioned transmitter Seki of the schema specified by the schema identifier of the above-mentioned engine condition definition section must own exists.

[Claim 14] In the transfer equipment of claim 13, including the transfer condition sufficiency certification Records Department for the above-mentioned electronic ticket recording the transfer condition sufficiency certification proving sufficiency of the above-mentioned transfer conditions, the above-mentioned transfer equipment contains a means record transfer condition sufficiency certification to the above-mentioned transfer condition sufficiency certification Records Department, when it succeeds to the above-mentioned verification further.

[Claim 15] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which specifies the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is inheritance equipment of the electronic ticket which has the engine condition definition section which specifies the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned migration conditions. A means to verify whether the ticket which above-mentioned transmitter Seki specified as the above-mentioned engine condition definition section must own is owned, the are recording equipment for accumulating an electronic ticket, and a means to accumulate the above-mentioned electronic ticket in the above-mentioned are recording equipment when the above-mentioned verification is filled are included.

[Claim 16] In the inheritance equipment of claim 15, the schema identifier which specifies the schema of the ticket which the issue engine of the above-mentioned electronic ticket has to own as the above-mentioned migration conditions is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket.

[Claim 17] In the inheritance equipment of claim 16, the above-mentioned means which carries out verification contains a means verify the above-mentioned condition sufficiency certification currently recorded on the above-mentioned condition sufficiency certification Records Department, including the condition sufficiency certification Records Department where the above-mentioned electronic ticket records the condition sufficiency certification proving sufficiency of the above-mentioned migration conditions.

[Claim 18] The above-mentioned migration conditions are conditions of issuance [in / on the inheritance equipment of claim 17, and / issue of the above-mentioned electronic ticket]. The above-mentioned condition sufficiency certification Records Department includes the conditions-of-issuance sufficiency certification Records Department which records the sufficiency certification of the above-mentioned conditions of issuance. The above-mentioned condition sufficiency certification verification means A means to verify whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned conditions of issuance exists, and to verify whether the above-mentioned conditions-of-issuance sufficiency certification is recorded on the above-mentioned conditions-of-issuance sufficiency certification Records Department is included.

[Claim 19] The above-mentioned migration conditions are transfer conditions [in / on the

inheritance equipment of claim 17, and / transfer of the above-mentioned electronic ticket]. The above-mentioned condition sufficiency certification Records Department includes the transfer condition sufficiency certification Records Department which records the sufficiency certification of the above-mentioned transfer conditions. The above-mentioned condition sufficiency certification verification means A means to verify that verify whether the above-mentioned ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned transfer conditions exists, and the above-mentioned transfer condition sufficiency certification is recorded on the above-mentioned transfer condition sufficiency certification Records Department is included.

[Claim 20] In claims 15, 16, 17, and 18 or the inheritance equipment of 19, the 2nd schema identifier which specifies the schema of the 2nd ticket which the receiving engine which receives the above-mentioned electronic ticket has to own is contained in the above-mentioned engine condition definition section of the above-mentioned condition Records Department as the above-mentioned migration conditions.

[Claim 21] In the inheritance equipment of claim 20, the above-mentioned means which carries out verification includes a means to verify whether it has the 2nd ticket of the schema specified by the above-mentioned 2nd schema identifier of the above-mentioned engine condition definition section as the above-mentioned receiving engine.

[Claim 22] In the electronic ticket inheritance equipment of claim 15, the ticket schema of the above-mentioned electronic ticket which carries out inheritance A means to verify what is defined by the electronic ticket schema definition engine carried by the schema definition engine table on which an electronic ticket schema definition engine's identifier was recorded for every right classification information is included. The identifier of the above-mentioned electronic ticket schema definition engine with which the above-mentioned ticket schema defined the above-mentioned ticket schema, The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions and ** which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 23] In the electronic ticket inheritance equipment of claim 15, the ticket schema of the electronic ticket which carries out inheritance A means to verify having the identifier carried by the schema identifier table on which the identifier of a ticket schema was recorded for every right classification information is included. The above-mentioned ticket schema The identifier of the above-mentioned ticket schema, and the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 24] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the consumption conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department It is consumption equipment of the electronic ticket which has the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as the above-mentioned consumption conditions. A means to verify whether

the ticket which the above-mentioned receiving engine specified as the above-mentioned engine condition definition section has to own is owned, and a means to transmit the above-mentioned electronic ticket to the above-mentioned receiving engine when verification by the above-mentioned verification means is filled are included.

[Claim 25] In the consumption equipment of claim 24, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the ticket which the above-mentioned receiving engine has to own as the above-mentioned consumption conditions.

[Claim 26] In the consumption equipment of claim 24, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned consumption conditions, and the above-mentioned means which carries out verification contains a means verify whether the above-mentioned ticket which above-mentioned transmitter Seki of the schema specified by the schema identifier of the above-mentioned engine condition definition section must own exists.

[Claim 27] In the consumption equipment of claim 26, the above-mentioned consumption equipment contains a means record consumption condition sufficiency certification to the above-mentioned consumption condition sufficiency certification Records Department, including the consumption condition sufficiency certification Records Department for the above-mentioned electronic ticket recording the consumption condition sufficiency certification proving sufficiency of the above-mentioned consumption conditions, when it succeeds to the above-mentioned verification further.

[Claim 28] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is ticket gate equipment of the electronic ticket which has the engine condition definition section which specifies the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own. A means to verify whether the ticket which above-mentioned transmitter Seki specified as the above-mentioned engine condition definition section must own is owned, and the are recording equipment which accumulates the above-mentioned electronic ticket when the above-mentioned verification is filled are included.

[Claim 29] In the ticket gate equipment of claim 28, the schema identifier which specifies the schema of the ticket which above-mentioned transmitter Seki must own as the above-mentioned migration conditions is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket.

[Claim 30] In the ticket gate equipment of claim 29, the above-mentioned means which carries out verification contains a means verify the above-mentioned condition sufficiency certification currently recorded on the above-mentioned condition sufficiency certification Records Department, including the condition sufficiency certification Records Department where the above-mentioned electronic ticket records the condition sufficiency certification proving sufficiency of the above-mentioned migration conditions.

[Claim 31] The above-mentioned migration conditions are conditions of issuance [in / on the ticket gate equipment of claim 30, and / issue of the above-mentioned electronic ticket]. The above-mentioned condition sufficiency certification Records Department includes the conditions-of-issuance sufficiency certification Records Department which records the sufficiency certification of the above-mentioned conditions of issuance. The above-mentioned condition sufficiency certification verification means A means to verify whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned conditions of issuance exists, and to verify whether the above-mentioned conditions-of-issuance sufficiency certification is recorded on the above-mentioned conditions-of-issuance

sufficiency certification Records Department is included.

[Claim 32] The above-mentioned migration conditions are transfer conditions [in / on the ticket gate equipment of claim 30, and / transfer of the above-mentioned electronic ticket]. The above-mentioned condition sufficiency certification Records Department includes the transfer condition sufficiency certification Records Department which records the sufficiency certification of the above-mentioned transfer conditions. The above-mentioned condition sufficiency certification verification means A means to verify that verify whether the above-mentioned ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned transfer conditions exists, and the above-mentioned transfer condition sufficiency certification is recorded on the above-mentioned transfer condition sufficiency certification Records Department is included.

[Claim 33] The above-mentioned migration conditions are consumption conditions [in / on the ticket gate equipment of claim 30, and / consumption of the above-mentioned electronic ticket]. The above-mentioned condition sufficiency certification Records Department includes the consumption condition sufficiency certification Records Department which records the sufficiency certification of the above-mentioned consumption conditions. The above-mentioned condition sufficiency certification verification means A means to verify whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned consumption conditions exists, and to verify whether the above-mentioned consumption condition sufficiency certification is recorded on the above-mentioned consumption condition sufficiency certification Records Department is included.

[Claim 34] In claims 28, 29, 30, 31, and 32 or the ticket gate equipment of 33, the 2nd schema identifier which specifies the schema of the 2nd ticket which the receiving engine which receives the above-mentioned electronic ticket has to own is contained in the above-mentioned engine condition definition section of the above-mentioned condition Records Department as the above-mentioned migration conditions.

[Claim 35] In the ticket gate equipment of claim 34, the above-mentioned means which carries out verification includes a means to verify whether it has the 2nd ticket of the schema specified by the above-mentioned 2nd schema identifier of the above-mentioned engine condition definition section as the above-mentioned receiving engine.

[Claim 36] In the ticket gate equipment of claim 28, the ticket schema of the received above-mentioned electronic ticket A means to verify what is defined by the electronic ticket schema definition engine carried by the schema definition engine table on which an electronic ticket schema definition engine's identifier was recorded for every right classification information is included. The identifier of the above-mentioned electronic ticket schema definition engine with which the above-mentioned ticket schema defined the above-mentioned ticket schema, The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 37] In the ticket gate equipment of claim 28, the ticket schema of the received above-mentioned electronic ticket A means to verify having the identifier carried by the schema identifier table on which the identifier of a ticket schema was recorded for every right classification information is included. The above-mentioned ticket schema The identifier of the above-mentioned ticket schema, and the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at

least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.
[Claim 38] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the conditions of issuance of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is the issue approach of an electronic ticket of having the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as conditions of issuance. : containing the following steps (a) The above-mentioned issue engine identifier Records Department of the above-mentioned electronic ticket, To the above-mentioned right information Records Department, the above-mentioned condition Records Department, the above-mentioned owner identifier Records Department, and the above-mentioned signature Records Department, respectively The above-mentioned issue engine identifier, Right information, conditions of issuance, an owner identifier, and an issue engine signature are recorded, and it is (b). It verifies whether the ticket which the above-mentioned receiving engine specified as the above-mentioned engine condition definition section has to own is owned. (c) The above-mentioned step (b) When the verification to depend is filled, the above-mentioned electronic ticket is transmitted to the above-mentioned receiving engine.
[Claim 39] In the issue approach of claim 38, the schema identifier which specifies the schema of the ticket which the receiving engine of the above-mentioned electronic ticket has to own is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket as the above-mentioned conditions of issuance.
[Claim 40] In the issue approach of claim 38, the above-mentioned engine condition definition section of the above-mentioned condition Records Department contains further the schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned conditions of issuance, and the above-mentioned means which carries out verification includes a means verify whether the above-mentioned ticket of the schema specified by the schema identifier of the above-mentioned engine condition definition section exists.
[Claim 41] In the issue approach of claim 40, when the above-mentioned issue approach succeeds to the above-mentioned verification further including the conditions-of-issuance sufficiency certification Records Department for the above-mentioned electronic ticket to record the conditions-of-issuance sufficiency certification proving sufficiency of the above-mentioned conditions of issuance, the step recorded to the above-mentioned conditions-of-issuance sufficiency certification Records Department in conditions-of-issuance sufficiency certification is contained.
[Claim 42] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department It is the transfer approach of an electronic ticket of having the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as the above-mentioned migration conditions. : containing the following steps (a) It verifies whether all the tickets that the above-mentioned receiving engine specified as the above-mentioned engine condition definition section has to own are owned. (b) The above-mentioned step (a) When the verification to depend is filled, the above-mentioned electronic ticket is transmitted to the above-mentioned receiving engine.
[Claim 43] In the transfer approach of claim 42, the above-mentioned engine condition definition

section contains the schema identifier which specifies the schema of the ticket which the above-mentioned receiving engine has to own as the above-mentioned transfer conditions.

[Claim 44] In the transfer approach of claim 42 the above-mentioned engine condition definition section The schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own is included as the above-mentioned transfer conditions. The above-mentioned step which carries out verification (a) The step which verifies whether the above-mentioned ticket which above-mentioned transmitter Seki of the schema specified by the schema identifier of the above-mentioned engine condition definition section must own exists is included.

[Claim 45] The transfer condition sufficiency certification Records Department for recording the transfer condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned transfer conditions to be in the transfer approach of claim 42 is included, and it is the above-mentioned step (a). When it succeeds to verification, the step record transfer condition sufficiency certification to the above-mentioned transfer condition sufficiency certification Records Department is contained.

[Claim 46] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which specifies the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is the inheritance approach of an electronic ticket of having the engine condition definition section which specifies the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned migration conditions. : containing the following steps (a) It verifies whether the ticket which above-mentioned transmitter Seki specified as the above-mentioned engine condition definition section must own is owned, and is (b). When the above-mentioned verification is filled, the above-mentioned electronic ticket is accumulated.

[Claim 47] In the inheritance approach of claim 46, the schema identifier which specifies the schema of the ticket which the issue engine of the above-mentioned electronic ticket has to own as the above-mentioned migration conditions is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket.

[Claim 48] The condition sufficiency certification Records Department which records the condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned migration conditions to be in the inheritance approach of claim 47 is included, and it is the above-mentioned step (a). The step verified in the above-mentioned condition sufficiency certification currently recorded on the above-mentioned condition sufficiency certification Records Department is contained.

[Claim 49] The above-mentioned migration conditions are conditions of issuance [in / on the inheritance approach of claim 48, and / issue of the above-mentioned electronic ticket]. the conditions-of-issuance sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned conditions of issuance —— containing —— the above-mentioned step (a) The step which verifies whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned conditions of issuance exists, and verifies whether the above-mentioned conditions-of-issuance sufficiency certification is recorded on the above-mentioned conditions-of-issuance sufficiency certification Records Department is included.

[Claim 50] The above-mentioned migration conditions are transfer conditions [in / on the inheritance approach of claim 48, and / transfer of the above-mentioned electronic ticket]. the transfer condition sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned transfer conditions —— containing —— the above-mentioned step (a) The step which verifies that verify whether the above-mentioned ticket of the schema specified by

the above-mentioned schema identifier recorded as the above-mentioned transfer conditions exists, and the above-mentioned transfer condition sufficiency certification is recorded on the above-mentioned transfer condition sufficiency certification Records Department is included.
[Claim 51] In claims 46, 47, 48, and 49 or the inheritance approach of 50, the 2nd schema identifier which specifies the schema of the 2nd ticket which the receiving engine which receives the above-mentioned electronic ticket has to own is contained in the above-mentioned engine condition definition section of the above-mentioned condition Records Department as the above-mentioned migration conditions.
[Claim 52] It sets to the inheritance approach of claim 51, and is the above-mentioned step (a). The step which verifies whether it has the 2nd ticket of the schema specified by the above-mentioned 2nd schema identifier of the above-mentioned engine condition definition section as the above-mentioned receiving engine is included.
[Claim 53] It sets to the inheritance approach of claim 46, and is the above-mentioned step (a). The ticket schema of the above-mentioned electronic ticket which carries out inheritance The step which verifies what is defined by the electronic ticket schema definition engine carried by the schema definition engine table on which an electronic ticket schema definition engine's identifier was recorded for every right classification information is included. The identifier of the above-mentioned electronic ticket schema definition engine with which the above-mentioned ticket schema defined the above-mentioned ticket schema, The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions and ** which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.
[Claim 54] It sets to the inheritance approach of claim 46, and is the above-mentioned step (a). The ticket schema of the electronic ticket which carries out inheritance The step which verifies having the identifier carried by the schema identifier table on which the identifier of a ticket schema was recorded for every right classification information is included. The above-mentioned ticket schema The identifier of the above-mentioned ticket schema, and the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 55] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the consumption conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department It is the consumption approach of an electronic ticket of having the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as the above-mentioned consumption conditions. : containing the following steps (a) It verifies whether the ticket which the above-mentioned receiving engine specified as the above-mentioned engine condition definition section has to own is owned, and is (b). The above-mentioned step (a) When the verification to depend is filled, the above-mentioned electronic ticket is transmitted to the above-mentioned receiving engine.

[Claim 56] In the consumption approach of claim 55, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the ticket which the above-mentioned receiving engine has to own as the above-mentioned consumption conditions.

[Claim 57] In the consumption approach of claim 55 the above-mentioned engine condition definition section The schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own is included as the above-mentioned consumption conditions. The above-mentioned step (a) The step which verifies whether the above-mentioned ticket which above-mentioned transmitter Seki of the schema specified by the schema identifier of the above-mentioned engine condition definition section must own exists is included.

[Claim 58] The consumption condition sufficiency certification Records Department for recording the consumption condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned consumption conditions to be in the consumption approach of claim 57 includes, and it is the above-mentioned step (a). When it succeeds to the above-mentioned verification further, the step record consumption condition sufficiency certification to the above-mentioned consumption condition sufficiency certification Records Department contains.

[Claim 59] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is the ticket gate approach of an electronic ticket of having the engine condition definition section which specifies the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own. : containing the following steps (a) It verifies whether the ticket which above-mentioned transmitter Seki specified as the above-mentioned engine condition definition section must own is owned, and is (b). When the above-mentioned verification is filled, the above-mentioned electronic ticket is accumulated.

[Claim 60] In the ticket gate approach of claim 59, the schema identifier which specifies the schema of the ticket which above-mentioned transmitter Seki must own as the above-mentioned migration conditions is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket.

[Claim 61] The condition sufficiency certification Records Department which records the condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned migration conditions to be in the ticket gate approach of claim 60 is included, and it is the above-mentioned step (a). The step verify the above-mentioned condition sufficiency certification currently recorded on the above-mentioned condition sufficiency certification Records Department is contained.

[Claim 62] The above-mentioned migration conditions are conditions of issuance [in / on the ticket gate approach of claim 61, and / issue of the above-mentioned electronic ticket]. the conditions-of-issuance sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned conditions of issuance -- containing -- the above-mentioned step (a) The step which verifies whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned conditions of issuance exists, and verifies whether the above-mentioned conditions-of-issuance sufficiency certification is recorded on the above-mentioned conditions-of-issuance sufficiency certification Records Department is included.

[Claim 63] The above-mentioned migration conditions are transfer conditions [in / on the ticket gate approach of claim 61, and / transfer of the above-mentioned electronic ticket]. the transfer condition sufficiency certification Records Department where the above-mentioned

condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned transfer conditions -- containing -- the above-mentioned step (a) The step which verifies that verify whether the above-mentioned ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned transfer conditions exists, and the above-mentioned transfer condition sufficiency certification is recorded on the above-mentioned transfer condition sufficiency certification Records Department is included.

[Claim 64] The above-mentioned migration conditions are consumption conditions [in / on the ticket gate approach of claim 61, and / consumption of the above-mentioned electronic ticket]. the consumption condition sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned consumption conditions -- containing -- the above-mentioned step (a) The step which verifies whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned consumption conditions exists, and verifies whether the above-mentioned consumption condition sufficiency certification is recorded on the above-mentioned consumption condition sufficiency certification Records Department is included.

[Claim 65] In claims 59, 60, 61, 62, and 63 or the ticket gate approach of 64, the 2nd schema identifier which specifies the schema of the 2nd ticket which the receiving engine which receives the above-mentioned electronic ticket has to own is contained in the above-mentioned engine condition definition section of the above-mentioned condition Records Department as the above-mentioned migration conditions.

[Claim 66] It sets to the ticket gate approach of claim 65, and is the above-mentioned step (a). The step which verifies whether it has the 2nd ticket of the schema specified by the above-mentioned 2nd schema identifier of the above-mentioned engine condition definition section as the above-mentioned receiving engine is included.

[Claim 67] It sets to the ticket gate approach of claim 59, and is the above-mentioned step (a). The ticket schema of the received above-mentioned electronic ticket The step which verifies what is defined by the electronic ticket schema definition engine carried by the schema definition engine table on which an electronic ticket schema definition engine's identifier was recorded for every right classification information is included. The identifier of the above-mentioned electronic ticket schema definition engine with which the above-mentioned ticket schema defined the above-mentioned ticket schema, The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 68] It sets to the ticket gate approach of claim 59, and is the above-mentioned step (a). The ticket schema of the received above-mentioned electronic ticket The step which verifies having the identifier carried by the schema identifier table on which the identifier of a ticket schema was recorded for every right classification information is included. The above-mentioned ticket schema The identifier of the above-mentioned ticket schema, and the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 69] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which

records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the conditions of issuance of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is the issue approach record medium recorded as a program which enforces the issue approach of an electronic ticket of having the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as conditions of issuance, by computer. The above-mentioned program is : (a) containing the following steps. The above-mentioned issue engine identifier Records Department of the above-mentioned electronic ticket, To the above-mentioned right information Records Department, the above-mentioned condition Records Department, the above-mentioned owner identifier Records Department, and the above-mentioned signature Records Department, respectively The above-mentioned issue engine identifier, Right information, conditions of issuance, an owner identifier, and an issue engine signature are recorded, and it is (b). It verifies whether the ticket which the above-mentioned receiving engine specified as the above-mentioned engine condition definition section has to own is owned. (c) The above-mentioned step (b) When the verification to depend is filled, the above-mentioned electronic ticket is transmitted to the above-mentioned receiving engine.

[Claim 70] In the issue approach record medium of claim 69, the schema identifier which specifies the schema of the ticket which the receiving engine of the above-mentioned electronic ticket has to own is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket as the above-mentioned conditions of issuance.

[Claim 71] In the issue approach record medium of claim 69, the above-mentioned engine condition definition section of the above-mentioned condition Records Department contains further the schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned conditions of issuance, and the above-mentioned step which carries out verification contains the step which verifies whether the above-mentioned ticket of the schema specified by the schema identifier of the above-mentioned engine condition definition section exists.

[Claim 72] In the issue approach record medium of claim 71, when the above-mentioned issue approach succeeds to the above-mentioned verification further including the conditions-of-issuance sufficiency certification Records Department for the above-mentioned electronic ticket to record the conditions-of-issuance sufficiency certification proving sufficiency of the above-mentioned conditions of issuance, the step recorded to the above-mentioned conditions-of-issuance sufficiency certification Records Department in conditions-of-issuance sufficiency certification is contained.

[Claim 73] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department It is the transfer approach record medium recorded as a program which enforces the transfer approach of an electronic ticket of having the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as the above-mentioned migration conditions, by computer. The above-mentioned program is : (a) containing the following steps. It verifies whether all the tickets that the above-mentioned receiving engine specified as the above-mentioned engine condition definition section has to own are owned. (b) The above-mentioned step (a) When the verification to depend is filled, the above-mentioned electronic ticket is transmitted to the above-mentioned receiving engine.

[Claim 74] In the transfer approach record medium of claim 73, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the

ticket which the above-mentioned receiving engine has to own as the above-mentioned transfer conditions.

[Claim 75] In the transfer approach record medium of claim 73 the above-mentioned engine condition definition section The schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own is included as the above-mentioned transfer conditions. The above-mentioned step which carries out verification (a) The step which verifies whether the above-mentioned ticket which above-mentioned transmitter Seki of the schema specified by the schema identifier of the above-mentioned engine condition definition section must own exists is included.

[Claim 76] The transfer condition sufficiency certification Records Department for recording the transfer condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned transfer conditions to be in the transfer approach record medium of claim 75 is included, and it is a step (a). When it succeeds to verification, the step record transfer condition sufficiency certification to the above-mentioned transfer condition sufficiency certification Records Department is contained.

[Claim 77] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which specifies the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is the record medium recorded as a program which enforces the inheritance approach of an electronic ticket of having the engine condition definition section which specifies the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own as the above-mentioned migration conditions, by computer. The above-mentioned program is : (a) containing the following steps. It verifies whether the ticket which above-mentioned transmitter Seki specified as the above-mentioned engine condition definition section must own is owned, and is (b). When the above-mentioned verification is filled, the above-mentioned electronic ticket is accumulated.

[Claim 78] In the inheritance approach record medium of claim 77, the schema identifier which specifies the schema of the ticket which the issue engine of the above-mentioned electronic ticket has to own as the above-mentioned migration conditions is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket.

[Claim 79] The condition sufficiency certification Records Department which records the condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned migration conditions to be in the inheritance approach record medium of claim 78 is included, and it is the above-mentioned step (a). The step verified in the above-mentioned condition sufficiency certification currently recorded on the above-mentioned condition sufficiency certification Records Department is contained.

[Claim 80] The above-mentioned migration conditions are conditions of issuance [in / on the inheritance approach record medium of claim 79, and / issue of the above-mentioned electronic ticket]. the conditions-of-issuance sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned conditions of issuance -- containing -- the above-mentioned step (a) The step which verifies whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned conditions of issuance exists, and verifies whether the above-mentioned conditions-of-issuance sufficiency certification is recorded on the above-mentioned conditions-of-issuance sufficiency certification Records Department is included.

[Claim 81] The above-mentioned migration conditions are transfer conditions [in / on the inheritance approach record medium of claim 79, and / transfer of the above-mentioned electronic ticket]. the transfer condition sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned transfer conditions -- containing -- the above-mentioned

step (a) The step which verifies that verify whether the above-mentioned ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned transfer conditions exists, and the above-mentioned transfer condition sufficiency certification is recorded on the above-mentioned transfer condition sufficiency certification Records Department is included.

[Claim 82] In claims 77, 78, 79, and 80 or the inheritance approach of 81, the 2nd schema identifier which specifies the schema of the 2nd ticket which the receiving engine which receives the above-mentioned electronic ticket has to own is contained in the above-mentioned engine condition definition section of the above-mentioned condition Records Department as the above-mentioned migration conditions.

[Claim 83] It sets to the inheritance approach record medium of claim 82, and is the above-mentioned step (a). The step which verifies whether it has the 2nd ticket of the schema specified by the above-mentioned 2nd schema identifier of the above-mentioned engine condition definition section as the above-mentioned receiving engine is included.

[Claim 84] It sets to the inheritance approach record medium of claim 77, and is the above-mentioned step (a). The ticket schema of the above-mentioned electronic ticket which carries out inheritance The step which verifies what is defined by the electronic ticket schema definition engine carried by the schema definition engine table on which an electronic ticket schema definition engine's identifier was recorded for every right classification information is included. The identifier of the above-mentioned electronic ticket schema definition engine with which the above-mentioned ticket schema defined the above-mentioned ticket schema, The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions and ** which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 85] It sets to the inheritance approach record medium of claim 77, and is the above-mentioned step (a). The ticket schema of the electronic ticket which carries out inheritance The step which verifies having the identifier carried by the schema identifier table on which the identifier of a ticket schema was recorded for every right classification information is included. The above-mentioned ticket schema The identifier of the above-mentioned ticket schema, and the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 86] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the consumption conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department It is the record medium recorded as a program which enforces the consumption approach of an electronic ticket of having the engine condition definition section which specifies the ticket which the receiving engine which receives the above-mentioned electronic ticket has to own as the above-mentioned consumption conditions, by computer. The above-mentioned program : containing the following steps (a) It verifies whether the ticket which the above-mentioned receiving engine

specified as the above-mentioned engine condition definition section has to own is owned, and is (b). The above-mentioned step (a) When the verification to depend is filled, the above-mentioned electronic ticket is transmitted to the above-mentioned receiving engine.

[Claim 87] In the consumption approach record medium of claim 86, the above-mentioned engine condition definition section contains the schema identifier which specifies the schema of the ticket which the above-mentioned receiving engine has to own as the above-mentioned consumption conditions.

[Claim 88] In the consumption approach record medium of claim 86 the above-mentioned engine condition definition section The schema identifier which specifies the schema of the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own is included as the above-mentioned consumption conditions. The above-mentioned step (a) The step which verifies whether the above-mentioned ticket which above-mentioned transmitter Seki of the schema specified by the schema identifier of the above-mentioned engine condition definition section must own exists is included.

[Claim 89] The consumption condition sufficiency certification Records Department for recording the consumption condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned consumption conditions to be in the consumption approach record medium of claim 88 includes, and it is the above-mentioned step (a). When it succeeds to the above-mentioned verification further, the step record consumption condition sufficiency certification to the above-mentioned consumption condition sufficiency certification Records Department contains.

[Claim 90] With the issue engine identifier Records Department which records the identifier of the issue engine of an electronic ticket With the right information Records Department which records the right information on the above-mentioned electronic ticket, and the condition Records Department which records the migration conditions of the above-mentioned electronic ticket It has the owner identifier Records Department which records an owner's identifier, and the signature Records Department which records a signature of the above-mentioned issue engine. The above-mentioned condition Records Department is the record medium recorded as a program which enforces the ticket gate approach of an electronic ticket of having the engine condition definition section which specifies the ticket which transmitter Seki which transmits the above-mentioned electronic ticket must own, by computer. The above-mentioned program is : (a) containing the following steps. It verifies whether the ticket which above-mentioned transmitter Seki specified as the above-mentioned engine condition definition section must own is owned, and is (b). When the above-mentioned verification is filled, the above-mentioned electronic ticket is accumulated.

[Claim 91] In the ticket gate approach record medium of claim 90, the schema identifier which specifies the schema of the ticket which above-mentioned transmitter Seki must own as the above-mentioned migration conditions is recorded on the above-mentioned engine condition definition section of the above-mentioned electronic ticket.

[Claim 92] The condition sufficiency certification Records Department which records the condition sufficiency certification the above-mentioned electronic ticket proves sufficiency of the above-mentioned migration conditions to be in the ticket gate approach record medium of claim 91 is included, and it is the above-mentioned step (a). The step verify the above-mentioned condition sufficiency certification currently recorded on the above-mentioned condition sufficiency certification Records Department is contained.

[Claim 93] The above-mentioned migration conditions are conditions of issuance [in / on the ticket gate approach record medium of claim 92, and / issue of the above-mentioned electronic ticket]. the conditions-of-issuance sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned conditions of issuance -- containing -- the above-mentioned step (a) The step which verifies whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned conditions of issuance exists, and verifies whether the above-mentioned conditions-of-issuance sufficiency certification is recorded on the above-mentioned conditions-of-issuance sufficiency certification

Records Department is included.
[Claim 94] The above-mentioned migration conditions are transfer conditions [in / on the ticket gate approach record medium of claim 92, and / transfer of the above-mentioned electronic ticket]. the transfer condition sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned transfer conditions — containing — the above-mentioned step (a) The step which verifies that verify whether the above-mentioned ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned transfer conditions exists, and the above-mentioned transfer condition sufficiency certification is recorded on the above-mentioned transfer condition sufficiency certification Records Department is included.
[Claim 95] The above-mentioned migration conditions are consumption conditions [in / on the ticket gate approach record medium of claim 92, and / consumption of the above-mentioned electronic ticket]. the consumption condition sufficiency certification Records Department where the above-mentioned condition sufficiency certification Records Department records the sufficiency certification of the above-mentioned consumption conditions — containing — the above-mentioned step (a) The step which verifies whether the ticket of the schema specified by the above-mentioned schema identifier recorded as the above-mentioned consumption conditions exists, and verifies whether the above-mentioned consumption condition sufficiency certification is recorded on the above-mentioned consumption condition sufficiency certification Records Department is included.
[Claim 96] In claims 90, 91, 92, 93, and 94 or the ticket gate approach record medium of 95, the 2nd schema identifier which specifies the schema of the 2nd ticket which the receiving engine which receives the above-mentioned electronic ticket has to own is contained in the above-mentioned engine condition definition section of the above-mentioned condition Records Department as the above-mentioned migration conditions.
[Claim 97] It sets to the ticket gate approach record medium of claim 96, and is the above-mentioned step (a). The step which verifies whether it has the 2nd ticket of the schema specified by the above-mentioned 2nd schema identifier of the above-mentioned engine condition definition section as the above-mentioned receiving engine is included.
[Claim 98] It sets to the ticket gate approach record medium of claim 90, and is the above-mentioned step (a). The ticket schema of the received above-mentioned electronic ticket The step which verifies what is defined by the electronic ticket schema definition engine carried by the schema definition engine table on which an electronic ticket schema definition engine's identifier was recorded for every right classification information is included. The identifier of the above-mentioned electronic ticket schema definition engine with which the above-mentioned ticket schema defined the above-mentioned ticket schema, The conditions of issuance which define the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, and the conditions for publishing the above-mentioned electronic ticket, At least one condition of consumption conditions of defining the conditions for consuming the transfer conditions and the above-mentioned electronic ticket which define the conditions for transferring the above-mentioned electronic ticket is specified. The engine conditions which define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Claim 99] It sets to the ticket gate approach record medium of claim 90, and is the above-mentioned step (a). The ticket schema of the received above-mentioned electronic ticket The step which verifies having the identifier carried by the schema identifier table on which the identifier of a ticket schema was recorded for every right classification information is included. The above-mentioned ticket schema The identifier of the above-mentioned ticket schema, and the right information structure which defined the structure of the right information on the above-mentioned electronic ticket, The transfer conditions which define the conditions for transferring the conditions of issuance and the above-mentioned electronic ticket which define the conditions for publishing the above-mentioned electronic ticket, The engine conditions which

at least one condition of consumption conditions of defining the conditions for consuming the above-mentioned electronic ticket is specified, and define at least one of transmitter Seki conditions and the receiving engine conditions as conditions by which assignment was carried out [above-mentioned] are recorded.

[Translation done.]

* NOTICES *

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the approach for circulating the electronic ticket to which various circulation conditions, such as conditions of issuance and transfer conditions, are especially given by application with a general-purpose processor about the approach and equipment which circulate the electronic ticket with which preventing duplex use and an unauthorized use consists of digital information demanded safely.
[0002]
[Description of the Prior Art] Now, although already circulated about software, an image, news, etc. using electronic means of communications, such as the Internet, not only as for these but the goods which can express as digital information, it is possible to make it circulate electronically. Although following various tickets are especially circulating as goods by service industries, these are goods with possible making it circulate electronically.
[0003] (1) A reservation ticket concert ticket, an electric-car reserved seat ticket, an airline ticket, a hotel reservation ticket, Tennis court reservation ticket (2) Exchange ticket bills of lading, a pawn ticket, a claim check, and real estate title deed (3) Numbered ticket bargain article numbered ticket, A bank window numbered ticket and medical-examination numbered ticket (4) A gift certificate gift certificate, the Biel ticket, a book coupon, The U.S. ticket and restaurant coupon (5) Prepaid card telephone card, U card, an IO card, and Highway Card (6) With a license certificate automobile license, a passport, and an admission-permit ticket, it is defined as what carried out the front chapter of the claim which charges the service which a publisher undertakes to a ticket owner, and an object here. Such a ticket can be electronically expressed, when the contents of the claim are expressed as digital information and a publisher attaches a digital signature to it.
[0004] Electronizing a ticket has the merit that the cost accompanying issue and mailing of paper is reducible. Moreover, constraint of the points of sale of a ticket, selling time amount, etc. decreases, a ticket comes to hand even from where always, and it becomes possible to use. Moreover, convenience, such as becoming possible to transfer through a network to the friend and acquaintance who separated to remoteness, improves. Motion that these tickets will be electronized from these reasons in recent years is becoming active.
[0005] About performance tickets, such as a concert and watching sport games, the contractor who has already sold the electronic ticket through the Internet exists, for example like e-ticket (http://www.e-ticket.net/). Moreover, he is the U.S. also about an exchange ticket. Gold & Silver Reserve and Inc. The contractor who sells the golden exchange ticket like e-gold (http://www.e-gold.com) exists. moreover, about the electronization of a gift certificate or a prepaid card For example Glassman, M.Manasse, M.Abadi, P.Gauthier, and "TheMillicent Protocol for Inexpensive Electronic written by P.Sobalvarro The micropayment method based on the prepaid coupon model described by Commerce" (Proceedings of4 th World Wide Web Conference), R. Rivest and Adi Shamir Work, "Pay Wordand MicroMint:Two The implementation approach of an electronic coupon ticket which is described by simple micropayment schemes." (Technical report, MIT, Cambridge1996) etc. is proposed.

[0006] In the case of a ticket, it is required to prevent the unauthorized use of duplex use etc. unlike digital contents, such as the usual image and a sound, but it is quickly developed also about the technique for preventing these in recent years. Although some methods are proposed also in the above-mentioned bibliography, in "the bibliography about an electronic cash technique, for example, Peter Wayner work, and Digital Cash" (Academic Press Ltd.ISBN 0-12-788772-5), the approach for transferring and trading in valuable information like electronic cash safely is packed. Moreover, United States patent No.5,621,797 and United States patent No.5,557,518 focus about electronic tickets, such as a ticket, a performance ticket, a communication link service access ticket, and a license certificate, and the approach for using and transferring an electronic ticket to insurance is proposed in them. Moreover, forgery and a duplicate are difficult for the Japan patent application public presentation 11-31204, and the electronic ticket system which can be proved for a third person is proposed in the contents of the ticket.

[0007] However, these conventional approaches propose the approach for preventing the injustice of an electronic ticket, and do not propose the general-purpose processor for publishing, transferring and consuming the method of defining a variety of electronic tickets general-purpose, and a variety of electronic tickets. For example, the general-purpose electronic ticket circulation control approach which can control following various circulation conditions, and its equipment are not yet examined.

[0008] (1) Only the contractor who obtained specific authorization prevents from publishing. An example, a public lottery ticket, betting ticket (2), etc. It prevents from publishing only to the user who received specific certification (sale). An example, a special-discount-for-students commuter pass (issue is possible only to people with a student identification card)

(3) Prevent from transferring except the contractor and user who received specific certification (sale). An example, an airline ticket (only a travel agency can be transferred)

(4) Prevent from consuming except the user who received specific certification. An example, a high-speed ticket (a passing ticket is the need)

(5) Prevent from clipping except the contractor who received specific certification. An example, the Biel ticket, a book coupon [0009]

[Problem(s) to be Solved by the Invention] Thus, in the former, although some electronic ticket arts and equipment have been proposed, the system of dedication has been proposed for every application. For this reason, there was a problem that it was required to develop ticket information reading software, a trading system, etc. according to individual for every ticket, and development cost became high. Then, although a method of processing various electronic tickets general-purpose was desired, since the class and property of an electronic ticket were various, it was difficult [it] to make a general-purpose ticket processor.

[0010] The purpose of this invention solves the above conventional technical problems, and is to offer the general-purpose electronic ticket art and general-purpose processor which can publish safely the electronic ticket which enables the definition of an electronic ticket with various properties general-purpose, and an electronic ticket with various circulation conditions, can transfer, and can be consumed.

[0011]

[Means for Solving the Problem] According to this invention, in each phase of migration of tickets, such as issue of an electronic ticket, transfer, and consumption, it requires of the receiving-side engine and/or transmitting-side engine of an electronic ticket, the engine condition definition section which specifies the ticket which controls circulation is prepared in an electronic ticket, and circulation of the electronic ticket of the various gestalten which the ticket related to an electronic ticket by this compounded is enabled. The electronic ticket is made easier to generalize by preparing the engine conditions which an issue engine's identifier and the right information on said electronic ticket are prepared in this electronic ticket, and define at least one of the conditions of issuance of said electronic ticket, transfer conditions, and the consumption conditions as it in the above-mentioned engine condition definition section, and preparing an owner's identifier and a signature of an issue engine further.

[0012] Moreover, the right information-structure definition which defines the class of attribute of

different various right information for every application which applies an electronic ticket, and semantics is prepared in the ticket schema which specifies the information structure of an electronic ticket, and it enables it to define at least one of the conditions of issuance of the above-mentioned electronic ticket, transfer conditions, and the consumption conditions as it further. Moreover, it enables it to define the schema identifier which defines the identifier of the ticket schema of the above-mentioned configuration as the electronic ticket of the above-mentioned configuration.

[0013] Moreover, in the electronic ticket of the above-mentioned configuration, in case an electronic ticket is ******(ed) or clipped, the condition sufficiency certification Records Department proving having satisfied it is prepared to at least one of conditions of issuance, transfer conditions, and the consumption conditions so that it can verify that the electronic ticket which has circulated arrives through right dealings. The issue equipment of the above-mentioned electronic ticket is equipped with a means to record the attribute value of an electronic ticket according to the definition of a ticket schema, a means to verify the conditions of issuance recorded on the condition Records Department, and a means to transmit an electronic ticket.

[0014] Moreover, the transfer equipment of the above-mentioned electronic ticket is equipped with a means to verify whether the transfer conditions of an electronic ticket are satisfied, a means to record transfer certification on the transfer certification Records Department when sufficient, and a means to transmit said electronic ticket to a transfer place. Moreover, the inheritance equipment of the above-mentioned electronic ticket is equipped with a means to verify that the conditions-of-issuance sufficiency certification of an electronic ticket has satisfied the conditions of issuance currently recorded on the conditions-of-issuance Records Department, a means to verify the justification of transfer certification, and a means to verify having satisfied the transfer conditions by which transfer condition sufficiency certification was recorded on the transfer condition Records Department.

[0015] Moreover, it has a means verify whether the consumption equipment of the above-mentioned electronic ticket has satisfied the consumption conditions currently recorded on the consumption condition definition section of the electronic ticket defined by the electronic ticket definition approach of the above-mentioned publication, a means record consumption certification to the consumption certification Records Department when sufficient, a means record consumption condition sufficiency certification to the consumption condition sufficiency certification Records Department, and a means transmit said electronic ticket to a service establishment.

[0016] Moreover, the ticket gate equipment of the above-mentioned electronic ticket is equipped with a means to verify having satisfied the consumption conditions recorded on the condition Records Department, and a means to accumulate the above-mentioned electronic ticket when it succeeds in verification.

[0017]
[Embodiment of the Invention] Issue of above various tickets, transfer, and use (consumption or ticket gate) can be considered to be circulation of the right accompanying a ticket. Circulation of a right consists of three basic transactions, these issue, transfer, and a ticket gate. That is, an electronic ticket is generated by the issue engine and transmitted to a user via direct or a network (issue). Here, a user may be a consumer, may be a dealer and may be a company. The published electronic ticket carries out **** circulation of between users (transfer), and, finally is consumed in exchange for service in a service provision engine (ticket gate). At this time, the count of available is decreased or cancelled depending on a ticket.

[0018] As a parameter which carries out circulation control of the ticket of various classes, there are the count of use, a shelf-life, duplicate propriety, transfer propriety, circulation range, etc. The circulation range is restricted by the conditions required of the transmitting side of an electronic ticket, and the conditions required of a receiving side. For example, when a travel firm looks for the member of crab and publishes a specific travel coupon (ticket) to a member to a member, it is required that having the business license certificate of a travel firm in the ticket transmitting side should have the membership card in which it is required as conditions and it is

shown that a ticket receiving side is the member of the crab. It can say that the business license certificate of a travel firm is a right which the firm has, and it can be said that the membership card of crab is a member's right. That is, circulation of a ticket can be considered to be migration of the right between such right holders. Paying attention to such a point, circulation is controlled by this invention by describing transmitting-side requirements and receiving-side requirements at that ticket itself for every phase of issue of a ticket, transfer, and consumption. In this invention, it makes it possible to treat a variety of tickets safely with common procedure by [with possible circulation in the form of a membership card or the electronic ticket according to this invention in the business license certificate itself] treating as a right.

[0019] Hereafter, the example of this invention is explained to a detail with reference to a drawing. Drawing 1 is the block block diagram of the whole system in which each equipment concerning issue of the electronic ticket (it is only hereafter called a ticket) in which one example of this invention is shown, transfer, and consumption is associated and shown. As shown in drawing 1 , an electronic ticket is issue engine equipment 108. Issue equipment 102 It is published and is user equipment 109. Inheritance equipment 103 It is received. It sets to migration of this ticket and is issue equipment 102 first. User 1 equipment 109 If it verifies whether it is proper and is proper, it is inheritance equipment 103 of user equipment about an electronic ticket. If it transmits, and it verifies whether inheritance equipment 103 has the proper electronic ticket which won popularity and is proper, it is user 1 equipment 109. It accumulates in are recording equipment 109S. user 1 equipment 109 from -- user n equipment 110 the case where a ticket is transferred -- the same -- transfer equipment 104 User n equipment 110 if it verifies whether it is proper and is proper -- a ticket -- inheritance equipment 105 transmitting -- user n equipment 110 Inheritance equipment 105 It verifies whether an electronic ticket is proper, and if proper, it will accumulate in are recording equipment 110S.

[0020] User n equipment 110 Consumption equipment 106 An electronic ticket is consumed and it is service establishment equipment 111. Ticket gate equipment 107 When clipping user n equipment 110 from -- an electronic ticket -- service period equipment 111 When transmitting, similarly Consumption equipment 106 Service establishment equipment 111 If it verifies whether it is proper and is proper, it is ticket gate equipment 107 of service establishment equipment about a ticket. It transmits and is ticket gate equipment 107. It verifies whether an electronic ticket is proper, and if proper, it will accumulate in are recording equipment 111S. In addition, migration may be repeated two or more times between user equipment the case where these migration (transfer) of an electronic ticket is not performed, and if needed.

[0021] Drawing 2 A and 2B are the ticket 230 which circulates between the issue engine equipment shown in drawing 1 , user equipment, and service establishment equipment. Ticket schema 210 which defines DS (drawing 2 A) and the structure of the ticket DS (drawing 2 B) is shown. First, the outline of the description of the electronic ticket by this invention is described. Electronic ticket 230 shown in drawing 2 A Issue engine ID 237 showing the issue engine of the ticket, the right information 239 on the ticket (the class of right, shelf-life, etc.), conditions of issuance 240, the transfer conditions 241, and consumption conditions 242 It is contained. Conditions of issuance 240, the transfer conditions 241, and consumption conditions 242 The conditions (rating) required of the transmitting side of the ticket in an issue phase, a transfer phase, and a consumption phase, respectively and the conditions (rating) required of the side which receives a ticket are specified. The format of such a ticket can constitute a variety of tickets general-purpose as an electronic ticket which can circulate. Moreover, at the example of drawing 2 A and 2B, the format of the ticket of drawing 2 A is the schema 210 shown in drawing 2 B specified by schema ID 231. It defines and a ticket is constituted according to the format. Such a ticket schema is beforehand prepared for every right classification of a ticket, for example, it opens to the public by the server on a network, and everyone enables it to access freely. Or the table of the schema corresponding to right classification may be beforehand distributed to a user.

[0022] Below, the example of this invention is explained concretely. it is shown in drawing 2 A -- as -- one ticket 230 Schema ID -- 231, ticket ID 232, the ticket instance 233, owner ID 234, the issue engine signature 235, and circulation certification 236 from -- it is constituted. Schema ID

231 are a ticket 230. It is an identifier to the ticket schema 210 (drawing 2 B) which specifies structure and the class of attribute which it should have. Ticket schema 210 It states for details later.

[0023] Ticket ID 232 are a ticket 230. It is the receiving identifier, and it gives so that it may become unique among all tickets. ticket instance 233 Issue engine ID 237, the right classification 238, the right information 239, conditions of issuance 240, the transfer conditions 241, and consumption conditions 242 from ── it is constituted. The issue engine ID 237 is the identifier of those who publish a ticket, or an organization. Right classification 238 It is an identifier showing the classification of tickets, such as an airline ticket, a gift certificate, a public lottery ticket, and a performance ticket. Right information 239 In the case of an airline ticket, in the case of performance tickets, such as a start day and a facilities name, the detailed right information on ticket dependence, such as holding time of day and a holding location, is defined. Conditions of issuance 240, the transfer conditions 241, and consumption conditions 242 If it attaches, it states later.

[0024] Owner ID 234 are the identifier of those who own the ticket, or an organization. Issue engine signature 235 It is a signature of above schema ID 231, ticket ID 232, the ticket instance 233, and the issue engine to association of owner ID 234. As the signature approach, it is RSA Data Security, for example. Electronic signature methods, such as a RSA method of a shrine and ESIGN of Nippon Telegraph and Telephone, can be used. Specifically, an issue engine is the signature 235 of as opposed to [generate the private key and public key in public key encryption, and] information 231-234 by the private key. Generating, a public key is a ticket 230. It attaches and distributes with a public key certificate (not shown). However, if a public key is used as issue engine ID 237 and it indicates to the electronic ticket 230, it is not necessary to distribute a public key and its certificate by attachment.

[0025] Circulation certification 236 For details, it states later. Ticket schema 210 Ticket 230 It is the information which specifies structure and the class of attribute which it should have, and schema definition engines, such as an issue engine, a service establishment, or an economic organization, can define freely. Moreover, anyone enables it to acquire the ticket schema 210 freely through a network 1407 using schema server 1401 grade, as shown in drawing 14 . However, as shown in drawing 15 , it can also distribute to issue engine equipment 1506, the user equipments 1505 and 1504, and service establishment equipment 1503 grade beforehand. In this case, it is not necessary to always connect with a network 1507 for ticket schema acquisition. Therefore, when carrying out through an IC card etc. also about transfer of a ticket, it can process off-line.

[0026] ticket schema 210 it is shown in drawing 2 B ── as ── the meta-schema ID ── 211, schema definition engine ID 212, schema ID 213, the ticket skeleton 214, and schema definition engine signature 215 from ── it is constituted. Schema definition engine signature 215 Like the case of an issue engine signature of a ticket, a schema definition engine generates a private key and a public key, and is signature 215 to information 211-214 by the private key. It generates, and a public key and a key certificate are attached and distributed to a schema (not shown). However, if a public key is used as schema ID 213 and it indicates to the ticket schema 210, it is not necessary to distribute a public key and its certificate by attachment.

[0027] Metaschema ID 211 are an identifier to the structure of a ticket schema, and when the structure of a ticket schema is changed in the future, they are for enabling distinction of an old and new ticket schema, and making shift easy. Schema definition engine ID 212 are the identifier of those who define a ticket schema, or an organization. Schema ID 213 are a schema 210. It is an own identifier. By including this in a ticket schema and signing with a schema definition engine, as shown in drawing 15 , it is the ticket schema 210. When the cache is carried out to the local storage (schema cashier SCH), or even if it is the case where it is directly passed from a dealings partner, it can verify that it is a just ticket schema to the schema ID. Ticket schema 210 There is the approach of gaining the ticket schema placed on the network with the HTTP protocol which specified as a schema ID by Universal Resource Identifier (URI) specification-ized in World-Wide-WebConsortium (W3C), for example, and has been specification-ized in IETF about this approach by the schema server 1401 grade of drawing 14 although it is necessary to

open to the public as already stated.

[0028] ticket skeleton 214 Ticket instance 233 the same -- the issue engine ID 216, the right classification 217, the right information-structure definition 218, conditions of issuance 219, the transfer conditions 220, and consumption conditions 221 from -- it is constituted. Issue engine ID 216 are the identifier of those who publish a ticket like issue engine ID 237 of a ticket, or an organization. However, it is different in issue engine ID 237 of a ticket, and the value does not necessarily need to be specified. Right classification 217 Right classification 238 of a ticket The same value is defined. Right information-structure definition 218 Right information 239 on a ticket The class of attribute which should be defined is defined. For example, it is the detailed attribute of ticket dependence at the case of an airline ticket at the case of performance tickets, such as a start day and a facilities name, such as holding time of day and a holding location. moreover, right information-structure definition 218 **** -- the concrete value over these attributes can also be specified. In this case, it cannot be defined except that concrete attribute value as the ticket which specified this ticket schema.

[0029] Conditions of issuance 219 There are conditions required of the side which receives the conditions required of the side which publishes a ticket, and a ticket. There are conditions of issuance of only the contractor (contractor with a qualification document) who received specific license like the public lottery ticket or the betting ticket as conditions for the side to publish being able to publish. Moreover, there are conditions of being able to publish only to a candidate (people with a student identification card) as conditions for the side which receives a ticket like a special-discount-for-students commuter pass. In order to define such conditions of issuance, as shown in drawing 3 A, by this invention, conditions of issuance are defined as transmitter Seki demand ticket schema ID 251 by receiving engine demand ticket schema ID 252. In the above-mentioned example, as for transmitter Seki demand ticket schema ID 251, the schema ID of the qualification document of public lottery issue authorization hits this. In the above-mentioned example, as for receiving engine demand ticket schema ID 252, the schema ID of a student identification card hits this.

[0030] Transfer conditions 220 There are transfer propriety conditions whether transfer of the ticket is allowed, conditions required of the side which transfers a ticket when it can transfer, and conditions required of the side which carries out the inheritance of the ticket. As conditions for the side which transfers a ticket, only the user (contractor with a travel agency certificate) who received specific license has transferred or sold like an airline ticket. There are conditions of being able to transfer a ticket only to a candidate (people with a student identification card) like conditions of issuance as conditions for the side which carries out inheritance like a special-discount-for-students commuter pass. In order to define such transfer conditions, as this invention shows to drawing 3 B, it is the transfer propriety 261. Transfer conditions are defined as transmitter Seki demand ticket schema ID 262 by receiving engine demand ticket schema ID 263. In the above-mentioned example, as for transmitter Seki demand ticket schema ID 262, the schema identifier of the qualification document of a travel agency hits this. In the above-mentioned example, as for receiving engine demand ticket schema ID 263, the schema ID of a student identification card hits this.

[0031] Consumption conditions 221 There are own conditions of a ticket, conditions of the side which consumes a ticket, and conditions of the side which clips a ticket. As own conditions of a ticket, as this invention shows to drawing 3 C, it is the expiration date 271 of that ticket. Count 272 of effective Sequentiality 273 Own conditions of a ticket are specified. Expiration date 271 It consists of termination time which becomes the initiation time to which the ticket becomes effective, and an invalid. Count 272 of effective It restricts once like an effective thing, and a ticket and a concert ticket, and can classify into three kinds of effective things until a use count will reach the count of assignment, or assignment frequency (all correspond to the amount of money) like an unrestricted thing, and a telephone card and a coupon ticket like a commuter pass or a passport, if it specifies how many times the ticket can use it and divides roughly. Sequentiality 273 It is specified when it must be consumed in order of the number which specifies the sequence of receiving service and was specified like the turn waiting numbered ticket of a bank or a hospital.

[0032] As conditions for the side which consumes a ticket, that only a specific member (people with a membership card) can consume etc. occurs like a member discount use ticket. As conditions for the side which clips a ticket, there are conditions of being able to clip only a specific service provider (people with a ticket gate certificate). In order to define such consumption conditions, in this invention, consumption conditions are defined as transmitter Seki demand ticket schema ID 274 by receiving engine demand ticket schema ID 275. In the above-mentioned example, as for transmitter Seki demand ticket schema ID 274, the schema ID of a member ticket hits this. In the above-mentioned example, as for receiving engine demand ticket schema ID 275, the schema ID of a ticket gate certificate hits this.

[0033] drawing 2 B -- setting -- conditions of issuance 219, the transfer conditions 220, and consumption conditions 221 ****** -- various things, such as conditions, such as conditions about an issue engine's scale and capital, age of the inheritance engine of a ticket, and height, can be considered also besides supposing that various certificates are owned as stated in the top. In this example, the detail about the specification method of these conditions is realizable by specifying the attribute and value of specification which was described above in addition to assignment of the various certificates by the ticket schema ID stated by this invention etc., although not stated.

[0034] The conditions of issuance 240 defined as a ticket side, the transfer conditions 241, and consumption conditions 242 Structure is the conditions of issuance 219 defined as the ticket schema side described above, the transfer conditions 220, and the consumption conditions 230. It has the same structure. Moreover, the conditions of issuance 219 defined by the ticket schema which a ticket refers to, the transfer conditions 220, and the consumption conditions 221 The contents are the conditions of issuance 240 defined by the ticket side, the transfer conditions 241, and the consumption conditions 242. But similarly, all are defined. However, when the additional definition is allowed by the ticket schema side, another conditions can be added to a ticket side. Although circulation control can be carried out on conditions severer than the issue defined by the ticket schema, transfer, and consumption conditions when publishing the ticket with which an administrative body or an economic organization specifies a ticket schema, and follows the ticket schema from each company by this, it becomes possible to forbid making it circulate on loose conditions on the other hand etc. As another example, they are the conditions of issuance 240 defined as a ticket side, the transfer conditions 241, and the consumption conditions 242. It omits and is a ticket 230. Ticket schema ID 231 defined to ticket schema 210 The conditions of issuance 219 which acquire and are defined as a ticket schema side, the transfer conditions 220, and consumption conditions 221 It can also use as circulation conditions for a ticket. However, the additional definition of the conditions cannot be carried out for every ticket in this case.

[0035] Moreover, in the ticket processing system which does not support transfer as another example, the transfer conditions 260 (drawing 3 B) are omissible. Moreover, with the ticket processing system of immobilization of an issue engine, they are the transmitter Seki conditions 251 of conditions of issuance 250 (drawing 3 A). Ticket 230 Even if it does not describe to self, by holding by the ticket processing-system side, this information is omissible. Similarly, with the ticket processing system of immobilization of a service establishment, they are the receiving engine conditions 275 of the consumption conditions 270 (drawing 3 C). It is omissible.

[0036] Furthermore, when a user's qualifying requirements are the ticket processing system of immobilization as another example, namely, when it is a premise that the user of the ticket processing system has joined the specific member, for example Ticket 230 By holding by the ticket processing-system side, even if it does not describe to self Conditions of issuance 250 The demand schema ID which are receiving engine conditions 252 and transfer conditions 260 Demand schema ID 263 which are demand schema ID 262 and the receiving engine conditions which are transmitter Seki conditions, and consumption conditions 270 Demand schema ID 274 which are transmitter Seki conditions are omissible.

[0037] Moreover, as another example, although a user's qualifying requirements differ for every ticket The above-mentioned conditions of issuance 250 Receiving engine demand schema ID 252 and transfer conditions 260 Transmitter Seki demand schema ID 262 and the receiving engine

conditions 263, And consumption conditions 270 Transmitter Seki demand schema ID 274 in being good as common conditions (user conditions) Conditions of issuance 250, the transfer conditions 260, and consumption conditions 270 Instead, a definition can also be given as three kinds of conditions, issue engine conditions, user conditions, and service establishment conditions. In this case, they are conditions of issuance 250 about the contents specified according to issue engine conditions. Transmitter Seki conditions 251 It carries out. They are conditions of issuance 250 about the contents specified according to user conditions. The receiving engine conditions 252, And transfer conditions 260 Transmitter Seki conditions 262 And the receiving engine conditions 263, and consumption conditions 270 Transmitter Seki conditions 274 ** -- the contents which carried out and were specified according to service establishment conditions -- consumption conditions 270 Receiving engine conditions 275 ** -- it can carry out by the same approach as the example which gives detail below by carrying out. In addition, in this case, it can transfer only to a specific user (for example, people with an agency certificate), and ordinary users have a difference that control of forbidding transfer cannot be performed. As mentioned above, it is not necessary to define all these conditions in a ticket or a ticket schema depending on the prerequisite of a ticket processing system.

[0038] Circulation certification 236 It is the part which records the circulation process of the ticket as shown in <u>drawing 2</u> A. In case a ticket is published, they are conditions of issuance 240. The conditions-of-issuance sufficiency certification 243 proving being sufficient, The transfer certification 244,246 and the transfer conditions 241 of proving who having transferred to whom in case it transfers The transfer condition sufficiency certification 245,247 proving having been sufficient, the consumption certification 248 which proves what the user consumed in case it consumes, and consumption conditions 242 Consumption condition sufficiency certification 249 proving having been sufficient from -- it is constituted. The conditions-of-issuance sufficiency certification 243, the transfer condition sufficiency certification 245, 247, and consumption condition sufficiency certification 249 Specifically, they are tickets, such as an issue license, a student identification card, an agency certificate, and ticket gate ****.

[0039] As another example, it is the circulation certification 236 which records a circulation process. Ticket 230 Instead of holding, the user of a circulation process records such information as each log, and when the unauthorized use of duplex use etc. is revealed, there is also a method of showing a research institute the log. Or such circulation information may be collectively recorded on a server. Furthermore, there is also a method of not recording even this log as another example. In this case, although it is difficult, the case where the ticket of a low price is treated, and the program of an electronic ticket processor may be stored in Tampa-proof equipment, and when an alteration is difficult, they may be satisfactory [pursuing a criminal], even if the unauthorized use of duplex use etc. is revealed later practically.

[0040] <u>Drawing 4</u> - <u>drawing 13</u> are the examples of the ticket shown above and a ticket schema. While these examples are shown below, detail about the control approach of conditions of issuance or consumption conditions is given. In addition, about the attribute by which the slash is drawn in <u>drawing 4</u> - <u>drawing 13</u> , it means that the attribute is not defined. Moreover, the item as which the "*" mark is specified in the ticket schema means that any value can be specified.

[0041] Since the value of a public key is acquirable from a public key certificate, the hash value of the identifier of the public key certificate instead of the public key itself which each engine generated as identifiers, such as issue engine ID 216, 237, owner ID 234, and schema definition engine ID 212, or a public key certificate, or the hash value of a public key can be used. In that case, it is necessary to distribute a public key and a public key certificate. However, it is also possible also about a public key certificate to specify it as the transmitter Seki demand ticket schema ID and the receiving engine demand ticket schema ID as a ticket required in the case of issue, transfer, and consumption, and it can also realize so that the key information may be used in the case of signature verification. In this example, in order to exclude distribution of a public key and to simplify processing, the public key which each engine generated as an identifier of issue engine ID 216, 237, an owner ID 234, and schema definition engine ID 212 grade will be used.

[0042] <u>Drawing 12</u> shows the example of a definition of a public lottery ticket. Each attribute

arrangement 1201-1205, and 1217-1219 are the same as that of the attribute arrangement which showed that of drawing 2 A to drawing 2 A, and 3A, 3B and 3C, and they show the example value to those attributes as a public lottery ticket. Explanation of each attribute value is omitted. Moreover, it is the same as that of what also shows the structure of a public lottery ticket schema shown in drawing 13 to drawing 2 B. Anyone can publish public lottery freely, and it is necessary to restrict it so that only an engine with the issue license which the government published can publish. the right classification 301 shown in drawing 3 D by this invention, 302, and 303 every -- table 300 which specifies the schema definition engine ID allowed issue of a schema definition It opens to the public widely. [then,] This table 300 It signs with the private key which it receives and a ticket processing system holds (304), and prevents being altered. Thereby, a certain ticket is this table 300. The ticket schema referred to from that ticket in spite of being the ticket of the right classification carried is this table 300. If the organization or company which is not carried defines, it will enable it to detect that it is the ticket which cannot be trusted.

[0043] as another example, it is shown in drawing 3 E instead of drawing 3 D -- as -- the right classification 311 and 312 and 313 every -- schema ID table 310 which defined the ticket schema ID There is a method of opening to the public widely. In spite of being the ticket of right classification with which a certain ticket is carried by this table 310 by this approach, the ticket schema ID of that ticket is this table 310. When not carried, it becomes possible to judge with it being the ticket whose trust is impossible. However, in this case, although it is necessary to guarantee the uniqueness of the relation between the ticket schema ID and a ticket schema, there is a method of using the hash value of a ticket schema etc. as for example, a schema ID etc. in this. Moreover, it is a table 310 by the private key which a ticket processing system holds in order to prevent the alteration of a schema ID table in the case of this example. It receives and is signature 314. It generates.

[0044] A schema definition engine table or schema ID table 310 As a open approach, it distributes with a HTTP protocol etc. by this example using the schema server 1401 (drawing 1414) connected to the network. However, there are the various approaches of distributing using CD-ROM sold at an electronic mail, satellite broadcasting service, or a bookstore besides this. In addition, when using a delivery means without the danger of being altered, it is the schema definition engine table 300. Signature 304 and schema ID table 310 Signature 314 It is omissible.

[0045] For example, when the "public lottery ticket" is specified as a right classification 1305 in the ticket schema of the public lottery ticket shown in drawing 13 , the list of schema definition engines corresponding to the right classification is obtained using the table of drawing 3 D. If the schema definition engine ID 1302 of drawing 13 is contained in this, it turns out that it is the ticket schema which it is just and can be trusted.

[0046] Public lottery issue engine qualification document schema 500 shown in drawing 5 by the ticket schema of the public lottery shown in drawing 13 as a transmitter Seki demand ticket schema ID 1307 of conditions of issuance User registration certificate schema 700 which schema ID 503 are specified and is shown in drawing 7 as a receiving engine demand ticket schema ID 1308 The schema ID 703 is specified. That the issue engine of a public lottery ticket needs to have the public lottery issue engine qualification document 400 (drawing 4) by this, and user registration certificate 600 which the reception engine of public lottery shows to drawing 6 It defines that it is necessary to have. Moreover, user registration certificate 600 which the consumption engine specified as the transmitter Seki demand ticket schema ID 1316 of consumption conditions shows similarly to drawing 6 It defines that it is necessary to have and that the liquidation place side specified as the receiving engine demand ticket schema ID 1317 needs to have liquidation place certification (not shown). About transfer, the public lottery ticket schema 3100 specified the failure as a transfer propriety attribute 1309, and has forbidden transfer. It omits about the example of liquidation place certification.

[0047] Drawing 4 is the public lottery issue engine qualification document 400. This schema 500 which is an example and is shown in drawing 5 It is an instance. Drawing 6 is the user registration certificate 600. This schema 700 which is an example and is shown in drawing 7 It is

an instance. The ticket which is further needed in the case of issue, transfer, and consumption in the case of these tickets is issue engine ID 504 specified as these ticket schemas 500 and the ticket skeleton of 700 although not specified, and 704. Issue engine ID 403 and 603 It is specified by carrying out and makes it impossible to publish these certificates except this issue engine.

[0048] Drawing 14 shows a system concept Fig. in case the electronic ticket by this above-mentioned invention moves via a network. The schema server 1401, issue engine equipment 1406, user 1 equipment 1405, user 2 equipment 1404, service establishment equipment 1403, and the duplex use check server 1402 are connected to the network 1407. Issue engine equipment 1406 obtains the schema corresponding to the right classification of the ticket which it is going to publish, and its ID from the schema server 1401, creates an electronic ticket, and transmits it to user 1 equipment 1405 via a network 1407. In this example, a user 1 transfers a ticket to a user 2, and a user 2 sends an electronic ticket to service establishment equipment 1403, and he receives service.

[0049] In each phase of migration of an electronic ticket, the transmitting side of a ticket is verified by the schema which acquired the conditions required of the transmitting side and receiving side of a ticket which should transmit from the schema server 1401 based on the transmitter Seki demand schema ID and the receiving engine demand schema ID. The receiving side of a ticket obtains a ticket schema from the schema server 1401 by the ticket schema ID at the time of verification of a receiving ticket, the adjustment of a schema is verified, and the schema obtained from the schema server based on the transmitter Seki demand schema ID in conditions of issuance, transfer conditions, or consumption conditions and the receiving engine demand schema ID according to the movement phase verifies further whether conditions are fulfilled.

[0050] Finally the electronic ticket transmitted to the service establishment 1403 is sent to the duplex use check server 1402, and the existence of an unauthorized use is verified. Drawing 15 shows the case where an electronic ticket moves to user 1 equipment 1505 from the issue engine 1506, user 2 equipment 1504 from user 1 equipment 1505, or service establishment equipment 1503 from user 2 equipment 1504 not passing through a network 1507 by [to which an IC card (or other record media) moves, for example] having written in the electronic ticket.

[0051] At this example, he is each schema cashier SCH of the schema server 1501 to the equipments 1502-1506. Distribution storing of the table of Schema ID and a schema and the table of right classification and Schema ID is carried out beforehand. therefore, a schema required for verification in each phase of migration of an electronic ticket -- this schema cashier SCH from -- it can obtain. The processing in each phase of migration of an electronic ticket is the same as that of the case of drawing 15 . Moreover, one or more phases of migration of the electronic ticket in drawing 15 R> 5 may be performed via a network 1507 to the case of drawing 14 , and **.

[0052] Drawing 16 is a block diagram showing the flow of the ticket in connection with the circulation control shown above. If the engine equipment in public lottery which is going to control circulation of a certain ticket like an administrative body is called circulation organizer equipment 1601 as shown in drawing 16 As a ticket required in order that circulation organizer equipment 1601 may control circulation of the ticket, the right certificate of issue, The right certificate of inheritance, the right certificate of transfer, the right certificate of consumption, the right certificate of a ticket gate, etc. are beforehand distributed to issue engine equipment 1606, vending machine Seki equipment 1605, user equipment 1604, and service establishment equipment 1603 grade. Very flexible circulation control is attained by defining reference use of which muniments is carried out at the time of circulation as the ticket of a target, and its schema. Moreover, since it can act as the self-taught connoisseur of the circulation control ticket itself, such as a right certificate of issue described above, using the general-purpose ticket issue described below, transfer, and consumption equipment, it becomes possible to also perform systematically employment of distributing these circulation control tickets beforehand. As shown in drawing 4 , drawing 6 , drawing 8 R> 8, and drawing 10 , each of certificates, registration certificates, certification, etc. is carrying out the same format as a ticket, and unific employment circulation can perform it with general-purpose equipment.

[0053] The circulation conditions by which the right certificate of issue, the right certificate of transfer, etc. are tickets, and control the circulation also to these can be specified. Hereafter, a drawing explains each procedure of the issue equipment which is the component of this invention, inheritance equipment, transfer equipment, consumption equipment, and ticket gate equipment. Drawing 17 is issue equipment 102 of issue engine equipment 108 (drawing 1). They are the ticket generation which can be set, and the main procedure which performs transmission.

[0054] Step 1701: Generate a ticket instance by making the ticket schema 210 (drawing 2 B) for issue into a form. And ticket ID 232 and the value over the attribute as which the value is not defined by the ticket schema in addition to this are set as a ticket 230 (drawing 2 R>2A) based on information, such as a demand from a user.
Step 1702: Conditions of issuance 240 of a ticket The ticket instance 233 It takes out from inside.
[0055] Step 1703: Perform receiving engine verification procedure by considering conditions of issuance as an input. Detail of receiving engine verification (verification of conditions which receiving engine should have) procedure is given by drawing 21 .
Step 1704: When receiving engine verification procedure is successful, move to step 1706, and when it fails, move to step 1705.
Step 1705: Generate an exception event and end.
[0056] Step 1706: Conditions of issuance 240 It considers as an input and transmitter Seki verification procedure is performed. Detail of transmitter Seki verification (verification of conditions which transmitter Seki should have) procedure is given by drawing 22 .
Step 1707: When transmitter Seki verification procedure is successful, move to step 1709, and when it fails, move to step 1708.
Step 1708: Generate an exception event and end.
[0057] although the conditions-of-issuance sufficiency certification 243 (drawing 2 A) is attached in this verification procedure if it succeeds by Step 1709:transmitter Seki verification (step 1706) -- this sufficiency certification 243 ****** -- for example, issue engine certificate 400 of drawing 4 It is attached. Ticket 230 Owner ID 234 are set up.
Step 1710: Signature 235 of an issue engine It creates and attaches.
[0058] Step 1711: Transmit a ticket.
Step 1712: Wait for the confirmation of receipt to arrive.
Step 1713: Ticket 230 generated when the confirmation of receipt arrived It deletes. Drawing 18 is transfer equipment 104 of user 1 equipment 109 (drawing 1 R> 1). It is the main procedure which transfers the electronic ticket to twist.
[0059] Step 1801: Pick out the ticket for transfer from a storage.
Step 1802: Ticket 230 Transfer conditions 241 It takes out.
Step 1803: Verify the transfer propriety 261 (drawing 3 B).
Step 1804: When transfer is good, move to step 1806, and when it cannot transfer, move to step 1805.
[0060] Step 1805: Generate an exception event and end.
Step 1806: Transfer conditions 241 It considers as an input and receiving engine verification procedure is performed. Detail of receiving engine verification procedure is given by drawing 21 .
Step 1807: When receiving engine verification procedure is successful, move to step 1809, and when it fails, move to step 1808.
[0061] Step 1808: Generate an exception event and end. Step 1809: Perform transmitter Seki verification procedure by considering transfer conditions as an input. Detail of transmitter Seki verification procedure is given by drawing 22 .
Step 1810: When transmitter Seki verification procedure is successful, move to step 1812, and when it fails, move to step 1811.
[0062] Step 1811: Generate an exception event and end.
Step 1812: Draw up and attach a transfer certificate. It is shown in drawing 10 , using the example of a transfer certificate as 1000. Moreover, the ticket schema of a transfer certificate is shown in drawing 11 as 1100. The ticket schema of a transfer certificate is defined by the offer

system of the transfer equipment of this invention, and the special schema ID is given (1001 1103). Moreover, transfer condition sufficiency certification 245 Although attached in the transmitter Seki verification procedure 1809, this is the user registration certificate 600 of drawing 6 R> 6. It becomes.

[0063] saying [that this can be made since an owner's private key is required in order to create the signature 1018 of the transfer certificate 1000 (drawing 10)] -- an owner -- it becomes the certification of saying [having the private key which only he knows]. In this invention, this is acting as an authentication function. To attack of attaching the transfer certificate made from other purposes, it is defending by this invention by having the ticket ID which is the identifier of a ticket proper, and its transfer time in the right information 1005 as contents of the transfer certificate. As an option, the random-number value created by the inheritance side is got, and there is also a method of signing to it.

[0064] Step 1813: Transmit a ticket.

Step 1814: Wait for the confirmation of receipt to arrive.

Step 1815: Delete the ticket generated when the confirmation of receipt arrived. Drawing 19 is consumption equipment 106 of user 2 equipment 110 (drawing 1). It is the Maine flow of the processing which consumes an electronic ticket.

[0065] Step 1901: Pick out the ticket for consumption from a storage.

Step 1902: Take the consumption conditions 242 (drawing 2 A) of a ticket, and come out.

Step 1903: Verify consumption propriety by performing verification of an expiration date, the count of effective, and sequentiality (drawing 3 C).

Step 1904: When consumption is good, move to step 1906, and when it cannot consume, move to step 1905.

[0066] Step 1905: Generate an exception event and end.

Step 1906: Perform receiving engine verification procedure by considering consumption conditions as an input. Detail of receiving engine verification procedure is given by drawing 21 .

Step 1907: When receiving engine verification procedure is successful, move to step 1909, and when it fails, move to step 1908.

[0067] Step 1908: Generate an exception event and end.

Step 1909: Perform transmitter Seki verification procedure by considering consumption conditions as an input. Detail of transmitter Seki verification procedure is given by drawing 22 .

Step 1910: When transmitter Seki verification procedure is successful, move to step 1912, and when it fails, move to step 1911.

[0068] Step 1911: Generate an exception event and end.

Step 1912: Consumption certificate 248 It creates and attaches. However, since in the case of a coupon ticket the consumption certificate is already drawn up when the part is already consumed, it updates in the new consumption certificate which updated the count of ** effective.

Step 1913: Transmit a ticket.

[0069] Step 1914: Wait for the confirmation of receipt to arrive.

Step 1915: If the confirmation of receipt arrives, ticket consumption procedure will be performed by considering consumption conditions and consumption certification as an input. Detail of consumption procedure is given by drawing 20 . It is the example of the consumption certificate drawn up in the above-mentioned step 1912 800 It carries out and is shown in drawing 8 . Moreover, the consumption certificate 800 Ticket schema 900 It is shown in drawing 9 . Consumption certificate 800 Ticket schema 900 It is defined by the offer system of the consumption equipment of this invention, and the special schema ID is given (801,903). How a user uses the Tampa-proof equipments, such as an IC card which cannot rewrite the contents, as the approach of preventing using repeatedly any number of times, without updating the count of ** effective can be used. Moreover, there is a method of using the duplex use check DB by the side of the ticket gate equipment described later etc.

[0070] consumption certificate 800 Signature 818 saying [that this can be made since an owner's private key is required in order to create] -- an owner -- it becomes the certification of saying [having the private key which only he knows]. In this invention, this is acting as an

authentication function. To attack of attaching the consumption certificate made from other purposes, it is the consumption certificate 800 by this invention. Right information 805 It is defending by having the ticket ID which is the identifier of a ticket proper as contents, and its consumption time. As an option, the random-number value created by the inheritance side is got, and there is also a method of signing to it.

[0071] Drawing 20 is user equipment 110. Consumption equipment 106 It is the flow of the ticket consumption procedure to depend.

Step 2001: Ticket 230 shown in drawing 2 A Consumption conditions 242 The specified count 272 (drawing 3 C) of effective is taken out.

Step 2002: When the count of effective is an unrestricted ticket like a commuter pass or entrance pass, end ticket consumption procedure. Otherwise, it moves to step 2003.

[0072] Step 2003: Take out the count n of ** effective (805) from the consumption certification 248 (also see the consumption certification 800 shown in drawing 8).

Step 2004: Although it restricts once like a concert ticket or a ticket and there is frequency assignment like an effective ticket or a coupon ticket, or a prepaid card, investigate whether it remained by this consumption and frequency was set to 0, and, in the case of 0, move to step 2005.

[0073] Step 2005: Delete a ticket and end. Drawing 21 is the flow of each receiving engine verification procedure in step 1703 of drawing 17 , step 1806 of drawing 18 , and step 1906 of drawing 19 .

Step 2101: Receiving engine demand ticket schema ID 252 of conditions of issuance 250, the transfer conditions 260, or (drawing 3 B) the consumption conditions 270 (drawing 3 C), and 263 Or 275 One non-verified receiving engine demand ticket schema ID is taken out from a list.

[0074] Step 2102: The non-verified receiving engine demand ticket schema ID exists and carries out ****** normal termination. When it exists, it progresses to step 2103.

Step 2103: In order to investigate whether the receiving engine holds the ticket restrained by the receiving engine demand ticket schema ID, perform the ticket gate equipment Maine flow shown in drawing 24 . It is cautious of applying a ticket gate equipment Maine flow in a direction contrary to the sense of the original issue and transfer by which receiving engine verification procedure is performed, and consumption. For this reason, transmitter Seki ID in receiving engine verification procedure is given as a receiving engine ID which gives the receiving engine demand ticket schema ID taken out at the above-mentioned step 2101 as a ticket gate ticket schema ID given as an input of a ticket gate equipment Maine flow, and gives as an input of a ticket gate equipment Maine flow.

[0075] Step 2104: When it succeeds in the ticket gate processing in the above-mentioned step 2103, move to step 2101 again for verification of the receiving engine (receiving engine conditions) by the following receiving engine demand ticket schema ID. When it fails, it moves to step 2105.

Step 2105: Generate an exception event and end. Drawing 22 R> 2 is the flow of each transmitter Seki verification procedure of step 1706 of drawing 17 , step 1809 of drawing 18 , and step 1909 of drawing 19 .

[0076] Step 2201: Transmitter Seki demand ticket schema ID 251 of conditions of issuance, transfer conditions, or consumption conditions, and 262 Or 274 One non-verified transmitter Seki demand ticket schema ID is taken out from a list.

Step 2202: If the non-verified transmitter Seki demand ticket schema ID does not exist, terminate normally. When it exists, it progresses to step 2203.

[0077] Step 2203: Search from a storage the ticket specified by the transmitter Seki demand ticket schema ID, and attach as the sufficiency certification 243 of conditions of issuance 240 (250), the transfer conditions 241 (260), or the consumption conditions 242 (270), 245, 247, and 249. These condition sufficiency certificates are certificates showing rating required of the issue engine of the ticket, a transfer engine, and a consumption engine, for example, attach a user registration certificate for an issue engine certificate as opposed to transfer conditions and consumption conditions to conditions of issuance.

[0078] Step 2204: When retrieval of the specified ticket goes wrong, move to step 2205. When it

succeeds, it moves to step 2201 again for verification of transmitter Seki (transmitter Seki conditions) by the following transmitter Seki demand ticket schema ID.
Step 2205: Since the conditions of transmitter Seki are not satisfied when it fails, generate an exception event and end.
[0079] Drawing 23 is user equipment 109, the ****** equipment 103 of 110 (drawing 1), or the Maine flow of the ticket ****** processing by 105.
Step 2301: Ticket 230 for transfer It receives from transmitter Seki.
Step 2302: Perform ticket verification procedure and verify the justification of a ticket. The detail of ticket verification procedure is shown in drawing 25 .
[0080] Step 2303: Succeed in ticket verification procedure, and when it moves and a case goes wrong at step 2305, move to step 2304.
Step 2304: Generate an exception event and end.
Step 2305: Accumulate the received ticket in a storage.
Step 2306: Notify to transmitter Seki what was received normally.
[0081] Drawing 24 is service establishment equipment 111 ticket-gate (drawing 1) equipment 107. It is the Maine flow of the ticket ticket gate processing to depend.
Step 2401: Transmit ticket schema ID 231 and the receiving engine ID for a ticket gate to transmitter Seki.
Step 2402: It is the ticket 230 for a ticket gate from transmitter Seki. It receives.
[0082] Step 2403: Perform ticket verification procedure and it is a ticket 230. Justification is verified. The detail of ticket verification procedure is shown in drawing 25 .
Step 2404: When it succeeds in ticket verification procedure, move to step 2406, and when it fails, move to step 2405.
Step 2405: Generate an exception event and end.
[0083] Step 2406: Accumulate the received ticket in a storage.
Step 2407: Notify to transmitter Seki what was received normally. Drawing 25 shows the verification procedure flow of an electronic ticket. Although ticket verification procedure is performed, respectively by the inheritance equipment 103 in the issue processing explained by drawing 1 , the inheritance equipment 105 in transfer processing, and the ticket gate equipment 107 in consumption processing, the ticket verification processing performed by the receptacle side in each phase of ticket migration performs all ticket verification that performs at the time of ticket migration in each phase until it reaches [from ticket issue] the phase. That is, the inheritance equipment 103 of user 1 equipment 109 performs steps 2501-2509 of drawing 25 at step 2302 of drawing 23 , the inheritance equipment 105 of user n equipment 110 performs steps 2501-2512 of drawing 25 at step 2302 of drawing 23 , and the ticket gate equipment 107 of service establishment equipment 111 performs steps 2501-2515 of drawing 25 at step 2403 of drawing 24 .
[0084] Step 2501: Perform schema adjustment verification procedure. The detail of schema adjustment verification procedure is shown in drawing 26 .
Step 2502: When it succeeds in schema adjustment verification procedure, move to step 2504, and when it fails, move to step 2503.
Step 2503: Generate an exception event and end.
[0085] Step 2504: Use an issue engine's public key and it is the signature 235 of an issue engine. It verifies.
Step 2505: When it succeeds in signature verification of an issue engine, move to step 2507, and when it fails, move to step 2506.
Step 2506: Generate an exception event and end.
Step 2507: Perform conditions-of-issuance verification procedure. The detail of conditions-of-issuance verification procedure is shown in drawing 27 .
[0086] Step 2508: When it succeeds in conditions-of-issuance verification procedure, move to step 2510, and when it fails, move to step 2509.
Step 2509: Generate an exception event and end. The ticket verification processing which inheritance equipment 103 performs is to here.
Step 2510: Perform transfer condition verification procedure. The detail of transfer condition

verification procedure is shown in drawing 29 .
[0087] Step 2511: When it succeeds in transfer condition verification procedure, move to step 2513, and when it fails, move to step 2512.
Step 2512: Generate an exception event and end. The ticket verification processing which inheritance equipment 105 performs is to here.
Step 2513: Perform consumption condition verification procedure. The detail of consumption condition verification procedure is shown in drawing 32 .
[0088] Step 2514: When it succeeds in consumption condition verification procedure, terminate normally. When it fails, it moves to step 2515.
Step 2515: Generate an exception event and end. Ticket gate equipment 107 performs all the verification processings so far from step 2501. Drawing 26 is a schema adjustment verification procedure flow in step 2501 of drawing 25 .
[0089] Step 2601: Received ticket 230 Schema ID 231 are taken out.
Step 2602: Schema ID 231 which was acquired at the above-mentioned step in the ticket gate It investigates whether it is in agreement with the schema ID which ticket gate equipment required, and if in agreement, it will move to step 2604. If not in agreement, it moves to step 2603.
Step 2603: Generate an exception event and end.
[0090] Step 2604: Ticket schema 210 specified by ticket schema ID 231 It acquires. There is the approach of acquiring from the schema server 1401 it is indicated to drawing 14 that already stated as this approach using a HTTP protocol. In order to verify trust of the ticket schema itself depending on an example at this time, The schema definition engine schema ID table 300 (drawing 3 D) or 310 (drawing 3 E) separately acquired by the already described approach is referred to. Acquired ticket schema 210 Schema definition engine table 300 [whether the engine carried defines and] Or acquired ticket schema 210 Ticket schema ID 213 are the schema ID table 310. It is confirmed whether it is carried or not.
[0091] Step 2605: Ticket schema 210 Ticket skeleton 214 Ticket 230 Ticket instance 233 It compares and is the ticket instance 233. Ticket skeleton 214 It verifies that it is an instance. Specifically, it is the ticket skeleton 214. When concrete attribute value is defined, the attribute value is the ticket instance 233. It verifies that it is in agreement with attribute value. About the attribute as which the "*" mark is defined by the ticket skeleton, it verifies that a certain value is defined by the ticket instance.
[0092] Step 2606: The above-mentioned instance 233 When it succeeds in verification, it terminates normally, and when it fails, it moves to step 2607.
Step 2607: Generate an exception event and end. Drawing 27 R> 7 is a conditions-of-issuance verification procedure flow in step 2507 of drawing 25 .
Step 2701: Conditions of issuance 250 It takes out.
[0093] Step 2702: When conditions of issuance do not exist, terminate normally, and when it exists, move to step 2703.
Step 2703: Conditions of issuance 250 Condition sufficiency certification verification procedure is performed by considering the list of transmitter Seki demand ticket schema ID 251 defined as an input. The detail of condition sufficiency certification verification procedure is shown in drawing 32 .
[0094] Step 2704: When it succeeds in condition sufficiency certification verification procedure, terminate normally, and when it fails, move to step 2705.
Step 2705: Generate an exception event and end. Drawing 28 R> 8 is the flow of the transfer condition verification procedure in step 2510 of drawing 25 .
Step 2801:circulation certification 236 inside to the transfer certification 244, and one of the 246 -- taking out .
[0095] Step 2802: When transfer certification exists, move to step 2805, and when [which was not] it exists, investigate whether owner ID 234 of a tail are in agreement with their ID.
Step 2803: When in agreement, terminate normally. In not being in agreement, it moves to step 2804.
Step 2804: Generate an exception event and end.
[0096] Step 2805: Perform transfer certification verification procedure. The detail of transfer

certification verification procedure is shown in <u>drawing 29</u> .

Step 2806: When it succeeds in transfer certification verification procedure, move to step 2808. When it fails, it moves to step 2807.

Step 2807: Generate an exception event and end.

[0097] Step 2808: Transfer conditions 260 It takes out.

Step 2809: When transfer conditions do not exist, in order to verify the following transfer certificate, when it moved and exists in step 2801, move to step 2810.

Step 2810: Transfer conditions 260 Condition sufficiency certification verification procedure is performed by considering the list of transmitter Seki demand ticket schema ID 262 defined as an input. The detail of condition sufficiency certification verification procedure is shown in <u>drawing 32</u> .

[0098] Step 2811: When it succeeds in condition sufficiency certification verification procedure, in order to verify the following transfer certificate, move to step 2801 again. When it fails, it moves to step 2812.

Step 2812: Since the conditions of transmitter Seki are not satisfied, generate an exception event and end.

[0099] <u>Drawing 29</u> is the flow of the transfer certification verification procedure in step 2805 of <u>drawing 28</u> .

In the case of the ticket which is not transferred the owner ID by whom even step 2901: was specified with the front transfer certificate (for example, 244), or before, a transfer continuity is verified by investigating whether the owner ID of the ticket is in agreement with the issue engine ID of a transfer certificate.

[0100] Step 2902: When it succeeds in transfer continuity verification, move to step 2904. When it fails, it moves to step 2903.

Step 2903: Generate an exception event and end.

Step 2904: Perform ticket verification procedure by considering a transfer certificate as an input. The detail of ticket verification procedure is the same as what was shown in <u>drawing 25</u> .

[0101] Step 2905: When it succeeds in ticket verification procedure, end normally. When it fails, it moves to step 2906.

Step 2906: Generate an exception event and end. <u>Drawing 30</u> R> 0 is the flow of the consumption condition verification procedure in step 2513 of <u>drawing 25</u> .

Step 3001: Circulation certification 236 Inside to consumption certification 248 It takes out.

[0102] Step 3002: When consumption certification exists, move to step 3004, and when it does not exist, move to step 3003.

Step 3003: Generate an exception event and end.

******** 3004: Perform consumption certification verification procedure. The detail of consumption certification verification procedure is shown in <u>drawing 31</u> .

[0103] Step 3005: When it succeeds in consumption certification verification procedure, move to step 3007, and when it fails, move to step 3006.

Step 3006: Generate an exception event and end.

Step 3007: Consumption conditions 270 It takes out.

Step 3008: When consumption conditions do not exist, move to step 3012, and when it exists, move to step 3009.

Step 3009: Consumption conditions 270 Condition sufficiency certification verification procedure is performed by considering the list of transmitter Seki demand ticket schema ID 274 defined as an input. The detail of condition sufficiency certification verification procedure is shown in <u>drawing 32</u> .

[0104] Step 3010: When it succeeds in condition sufficiency certification verification, move to step 3012, and when it fails, move to step 3011.

Step 3011: Generate an exception event and end.

Step 3012: Perform duplex use check procedure. The detail of duplex use check procedure is shown in <u>drawing 33</u> .

[0105] Step 3013: When it succeeds in duplex use check procedure, end normally, and when it fails, move to step 3014.

Step 3014: Generate an exception event and end. Drawing 31 R> 1 is the flow of the consumption certification verification procedure in step 3004 of drawing 30 .

Step 3101: In the case of the ticket which is not transferred owner ID 1017 specified with the final transfer certificate 246 (drawing 2 A, drawing 10 as an example), or before, verify a consumption continuity by investigating whether the owner ID of the ticket is in agreement with the issue engine ID of a consumption certificate.

[0106] Step 3102: When it succeeds in consumption continuity verification, move to step 3104. When it fails, it moves to step 3103.

Step 3103: Generate an exception event and end.

Step 3104: Perform ticket verification procedure by considering a consumption certificate as an input. The detail of ticket verification procedure was shown in drawing 25 .

[0107] Step 3105: When it succeeds in ticket verification procedure, end normally. When it fails, it moves to step 3106.

Step 3106: Generate an exception event and end. Drawing 32 R> 2 shows the flow of the condition sufficiency certification verification procedure in step 2703 of drawing 27 , step 2810 of drawing 28 , and step 3009 of drawing 30 .

[0108] Step 3201: Take out one non-verified transmitter Seki demand ticket schema ID from the list of transmitter Seki demand ticket schemas ID.

Step 3202: If the non-verified transmitter Seki demand ticket schema ID does not exist, terminate normally. When it exists, it progresses to step 3203.

Step 3203: Take out the condition sufficiency certification specified by the transmitter Seki demand ticket schema ID.

[0109] Step 3204: When the specified condition sufficiency certification exists, move to step 3206. When it does not exist, it moves to step 3205.

Step 3205: Since the conditions of transmitter Seki are not satisfied, generate an exception event and end.

Step 3206: Perform ticket verification procedure over condition sufficiency certification, and verify the justification of condition sufficiency certification. The detail of ticket verification procedure was shown in drawing 25 .

[0110] Step 3207: When it succeeds in ticket verification procedure, in order to verify the conditions of transmitter Seki by the following transmitter Seki demand ticket schema ID, move to step 3201 again. When it fails, it moves to step 3208.

Step 3208: Since the conditions of transmitter Seki are not satisfied, generate an exception event and end.

[0111] Drawing 33 is the flow of the duplex use check procedure in step 3012 of drawing 30 .

Step 3301: Consumption conditions 270 Count 272 of effective It takes out.

Step 3302: It is the count 272 of effective like a commuter pass or entrance pass. When it is an unrestricted ticket, ticket consumption procedure is ended. Otherwise, it moves to step 3303.

[0112] Step 3303: Search Ticket ID as an input to the duplex use check DB, and confirm whether be the already used ticket. The duplex use check DB is accumulating the ticket ID of the ticket which is within an expiration date and already became used. About what has a use count like a coupon ticket, it detects managing ********** management and reusing a used ticket unjustly.

[0113] Although this example described how to perform a duplex use check on-line, the Tampaproof equipments, such as an IC card, can be used and this processing can also be subsequently checked off-line as an auxiliary means for raising an abbreviation or safety about the case where unjust use can prevent beforehand. When this processing is omitted, since a ticket ID 232 is unnecessary, it can also be omitted.

[0114] Moreover, a duplex use check can also use the server according to individual for every various tickets, and can also use general-purpose service like the duplex use check engine equipment 1602 shown in drawing 16 .

Step 3304: When injustice is not detected by the above-mentioned duplex use check, move to step 3306. When injustice is detected, it moves to step 3305.

[0115] Step 3305: Generate an exception event and end.

Step 3306: Remain, although it restricts once like a concert ticket or a ticket and there is count assignment like an effective ticket or a coupon ticket, or a prepaid card, and investigate whether frequency is 1.

Step 3307: When the remaining frequency is two or more, it is the count 272 of ** effective. It reduces by one and moves to step 3309.

[0116] Step 3308: When the remaining frequency is 1, make the condition of a ticket used and move to step 3309.

Step 3309: Update the duplex use check DB and end. Next, the functional configuration of the issue equipment 102 in the system shown in drawing 1 which carries out the electronic ticket by this invention, inheritance equipment 103, 105, transfer equipment 104, consumption equipment 106, and ticket gate equipment 107 is shown.

[0117] Issue equipment 102 shown in drawing 34 The attribute generation section 1021, the verification section 1022, the Records Department 1023, and the transmitting section 1024 are included, and the verification section 1022 is transmitter Seki ticket possession verification section 1022A and receiving engine ticket possession verification section 1023B further. It contains. The attribute generation section 1021 creates an electronic ticket by writing in a record medium with the electronic format having shown attribute value, such as an issue engine identifier of an electronic ticket, right information on a ticket, conditions of issuance, and an owner identifier, by drawing 2 A based on the inputted information. The record medium as an object which should write in an electronic ticket may be a record medium with which it equipped from the outside, or may be a record medium in equipment.

[0118] Receiving engine ticket possession verification section 1022A It verifies whether the receiving engine owns the ticket which the receiving engine which was specified as the conditions of issuance recorded on the electronic ticket, and which is a transmission place has to own. Transmitter Seki ticket possession verification section 1022B It verifies whether transmitter Seki owns the ticket which transmitter Seki specified as the conditions of issuance recorded on the electronic ticket must own.

[0119] The Records Department 1023 records conditions-of-issuance sufficiency certification on an electronic ticket, when an electronic ticket satisfies conditions of issuance by the verification section 1022. This electronic ticket is transmitted to a receiving engine from the transmitting section 1024. Transfer equipment 104 shown in drawing 35 Are recording section 109S, the verification section 1041, the Records Department 1042, and the transmitting section 1043 are included, and the verification section 1041 is receiving engine ticket possession verification section 1041A. Transmitter Seki ticket possession verification section 1041B It contains. In addition, as shown in drawing 1 , are recording section 109S are shared with inheritance equipment 103.

[0120] The electronic ticket read from are recording section 109S is given to the verification section 1041. Receiving engine ticket possession verification section 1041A It verifies whether the receiving engine owns the ticket which the receiving engine specified as the transfer conditions recorded on the electronic ticket has to own. Transmitter Seki ticket possession verification section 1041B It verifies whether transmitter Seki owns the ticket which transmitter Seki specified as the transfer conditions recorded on the electronic ticket must own.

[0121] The Records Department 1042 records transfer certification and transfer condition sufficiency certification on an electronic ticket, when an electronic ticket satisfies transfer conditions by the verification section 1041. This electronic ticket is transmitted to a receiving engine from the transmitting section 1043. inheritance equipment 103 as shown in drawing 1 , in case the inheritance equipment shown in drawing 36 carries out the inheritance of the electronic ticket from issue engine equipment 102 Transfer equipment 104 from -- inheritance equipment 105 in the case of carrying out the inheritance of the electronic ticket It is applied to all. Inheritance equipment 103 A receive section 1031, the verification section 1032, and are recording section 109S are included, and the verification section 1032 is [transmitter Seki ticket possession verification section 1032A, receiving engine ticket possession verification section 1032B, and] ticket verification section 1032C. Schema verification section 1032D It contains.

[0122] The next verification is performed in the verification section 1032 to the electronic ticket

received in the receive section 1031. Transmitter Seki ticket possession verification section 1032A It verifies whether transmitter Seki owns the ticket which transmitter Seki specified as the conditions of issuance (they are transfer conditions in the case of transfer equipment 105) recorded on the electronic ticket must own. Receiving engine ticket possession verification section 1032B It verifies whether the receiving engine owns the ticket which the receiving engine specified as the conditions of issuance recorded on the electronic ticket has to own.

[0123] Ticket verification section 1032C The conditions-of-issuance sufficiency certification (in the case of transfer equipment 105, they are the transfer certification and the transfer condition sufficiency certification) and the issue engine signature which transmitter Seki of an electronic ticket recorded on the electronic ticket are verified. Schema verification section 1032D The schema definition engine identifier of this electronic ticket checks what is recorded on the schema definition engine table on which the schema definition engine identifier is indicated for every right classification of an electronic ticket. Or the schema of this electronic ticket may check what is recorded on the schema identifier table on which the ticket schema identifier was indicated for every right classification of an electronic ticket.

[0124] If it succeeds in these verification by the verification section 1032, an electronic ticket will be accumulated in are recording section 109S until it is transferred to other engines. Consumption equipment 106 shown in drawing 37 A functional configuration is shown, are recording section 110S, the verification section 1061, the Records Department 1062, and the transmitting section 1063 are included, and the verification section 1061 is receiving engine ticket possession verification section 1061A. Transmitter Seki ticket possession verification section 1061B It contains. Are recording section 110S are using with inheritance equipment 105 in common in drawing 1 .

[0125] The electronic ticket read from are recording section 110S is given to the verification section 1061. Receiving engine ticket possession verification section 1061A It verifies whether the receiving engine owns the ticket which the receiving engine specified as the consumption conditions recorded on the electronic ticket has to own. Transmitter Seki ticket possession verification section 1061B It verifies whether transmitter Seki owns the ticket which transmitter Seki specified as the consumption conditions recorded on the electronic ticket must own.

[0126] The Records Department 1062 records consumption certification and consumption condition sufficiency certification on an electronic ticket, when an electronic ticket satisfies consumption conditions by the verification section 1061. This electronic ticket is transmitted to a receiving engine from the transmitting section 1063. Ticket gate equipment 107 shown in drawing 38 A receive section 1071, the verification section 1072, and are recording section 111S are included, and the verification section 1072 is transmitter Seki ticket possession verification section 1072A. Receiving engine ticket possession verification section 1072B Ticket verification section 1072C and schema verification section 1072D are included.

[0127] Transmitter Seki ticket possession verification section 1072A It verifies whether transmitter Seki owns the ticket which transmitter Seki specified as the consumption conditions recorded on the electronic ticket given from the receive section 1071 must own. Receiving engine ticket possession verification section 1072B It verifies whether the receiving engine owns the ticket which the receiving engine specified as the consumption conditions recorded on the electronic ticket has to own.

[0128] Ticket verification section 1072C The conditions-of-issuance sufficiency certification, the transfer certification, the transfer condition sufficiency certification, the consumption certification and the consumption condition sufficiency certification, and the issue engine signature which were recorded on the electronic ticket are verified. Schema verification section 1072D The schema definition engine identifier of this electronic ticket checks what is recorded on the schema definition engine table on which the schema definition engine identifier is indicated for every right classification of an electronic ticket. Or the schema of this electronic ticket may check what is recorded on the schema identifier table on which the ticket schema identifier was indicated for every right classification of an electronic ticket.

[0129] If it succeeds in these verification by the verification section 1072, an electronic ticket will be accumulated in are recording section 111S. Each processing in the issue equipment of the

electronic ticket mentioned above, transfer equipment, inheritance equipment, consumption equipment, and ticket gate equipment can make it program read-out and by carrying out decode activation by computer.

[0130] As explained above, by this invention, it is (1). Right information 239 which defines different various right information for every application which applies a ticket Conditions of issuance 240 of a ticket Transfer conditions 241 Consumption conditions 242 Ticket 230 It enables it to give a definition.

(2) Moreover, the right information-structure definition 218 which defines by this invention the class of attribute of different various right information for every application which applies an electronic ticket, and semantics and the conditions of issuance 219 of said electronic ticket Transfer conditions 220 Consumption conditions 221 Ticket schema 210 It enables it to give a definition.

[0131] (3) Moreover, electronic ticket 230 of the above-mentioned configuration from this invention Identifier 231 of the ticket schema of the above-mentioned configuration It enables it to give a definition.

(4) Moreover, in this invention, it has the condition sufficiency certification Records Department 243 proving having satisfied the conditions of issuance, transfer conditions, and consumption conditions of a ticket, 245, 247, and 249 in the ticket definition approach of the above-mentioned configuration. Consequently, it becomes possible to verify that the ticket which has circulated arrives a ticket through right dealings inheritance or in case it clips.

[0132] (5) Ticket issue equipment 102 by this invention It has a means to record the attribute value of an electronic ticket according to the definition of a ticket schema, and a means to verify the conditions of issuance recorded on the condition Records Department. Consequently, issue of a ticket with various circulation conditions is attained with common issue equipment.

(6) Moreover, ticket transfer equipment 104 by this invention It has a means to verify whether the transfer conditions of a ticket are satisfied, a means to record transfer certification on the transfer certification Records Department when sufficient, and a means to transmit said ticket to a transfer place. Consequently, a ticket with various circulation conditions becomes negotiable with common transfer equipment.

[0133] (7) Moreover, the ticket inheritance equipment 103 by this invention and 105 It has a means to verify that the conditions-of-issuance sufficiency certification of a ticket has satisfied the conditions of issuance currently recorded on the conditions-of-issuance Records Department, a means to verify the justification of transfer certification, and a means to verify having satisfied the transfer conditions by which transfer condition sufficiency certification was recorded on the transfer condition Records Department. Consequently, the inheritance of a ticket with various circulation conditions becomes possible with common inheritance equipment.

[0134] (8) Moreover, the ticket consumption equipment 106 by this invention It has a means verify whether the consumption conditions currently recorded on the consumption condition definition section of the ticket defined by the ticket definition approach of the above-mentioned publication have satisfied, a means record consumption certification to the consumption certification Records Department when sufficient, a means record consumption condition sufficiency certification to the consumption condition sufficiency certification Records Department, and a means transmit said ticket to a service establishment. Consequently, consumption of a ticket with various circulation conditions is attained with common consumption equipment.

[0135] (9) Moreover, ticket ticket gate equipment 107 by this invention It has a means to verify having satisfied the consumption conditions recorded on the consumption condition Records Department, and a means to record consumption certification on the consumption signature Records Department when verification is successful. Consequently, the ticket gate of a ticket with various circulation conditions is attained with common ticket gate equipment. although conditions of issuance, transfer conditions, and consumption conditions were established in ****
-- these -- at least one is good.

[0136]
[Effect of the Invention] The right information-structure definition which defines the class of

attribute of different various right information for every application which applies an electronic ticket, and semantics according to this invention as explained above, In order to define the conditions of issuance, transfer conditions, and consumption conditions of different various electronic tickets for every application which apply an electronic ticket as the ticket schema or the electronic ticket itself which specifies the structure of an electronic ticket, It can process, while the issue equipment which processes these electronic tickets, inheritance equipment, transfer equipment, consumption equipment, and ticket gate equipment interpret these conditions. By this Various tickets with various circulation conditions can process now with common issue equipment, inheritance equipment, transfer equipment, consumption equipment, and ticket gate equipment. Thereby, like before, it becomes unnecessary to develop ticket information reading software, a trading system, etc. according to individual for every ticket, and drastic reduction of development cost is attained.

[Translation done.]

* NOTICES *

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2.**** shows the word which can not be translated.
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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] Issue of the ticket in which one example of this invention is shown, transfer, the block block diagram of each consumptive whole equipment.
[Drawing 2] The data structure diagram of the ticket which circulates between the issue engine equipment which showed A to drawing 1 , user equipment, and service establishment equipment, and B are the data structure diagrams of the ticket schema which defines the structure of the ticket.
[Drawing 3] The schema definition engine table and E as which the example A indicates the definition of conditions of issuance to be, the example B indicates the definition of transfer conditions to be, the example C indicates the definition of consumption conditions to be, and D specify the schema definition engine allowed a schema definition to each right classification are the table on which the schema ID corresponding to right classification was signed.
[Drawing 4] Drawing showing the example of a public lottery issue engine qualification document.
[Drawing 5] Drawing showing the example of a public lottery issue engine qualification document schema.
[Drawing 6] Drawing showing the example of a user registration certificate.
[Drawing 7] Drawing showing the example of a user registration certificate schema.
[Drawing 8] Drawing showing the example of a consumption certificate.
[Drawing 9] Drawing showing the example of a consumption certificate schema.
[Drawing 10] Drawing showing the example of a transfer certificate.
[Drawing 11] Drawing showing the example of a transfer certificate schema.
[Drawing 12] Drawing showing the example of a definition of a public lottery ticket.
[Drawing 13] Drawing showing the example of a definition of a public lottery ticket schema.
[Drawing 14] Drawing showing the example of 1 configuration of the gestalt to which the issue engine equipment which is the component of this invention, user equipment, service establishment equipment, schema definition engine equipment, and duplex use check engine equipment are connected through the network.
[Drawing 15] Drawing showing the example of 1 configuration of the gestalt to which the issue engine equipment which is the component of this invention, user equipment, service establishment equipment, schema definition engine equipment, and duplex use check engine equipment are not connected through the network.
[Drawing 16] The block diagram showing the flow of the ticket in connection with circulation control.
[Drawing 17] Drawing showing the Maine flow of issue equipment.
[Drawing 18] Drawing showing the Maine flow of transfer equipment.
[Drawing 19] Drawing showing the Maine flow of consumption equipment.
[Drawing 20] Drawing showing the flow of ticket consumption procedure.
[Drawing 21] Drawing showing the flow of receiving engine verification procedure.
[Drawing 22] Drawing showing the flow of transmitter Seki verification procedure.
[Drawing 23] Drawing showing the Maine flow of inheritance equipment.
[Drawing 24] Drawing showing the Maine flow of ticket gate equipment.

[Drawing 25] Drawing showing the flow of ticket verification procedure.
[Drawing 26] Drawing showing the flow of schema adjustment verification procedure.
[Drawing 27] Drawing showing the flow of conditions-of-issuance verification procedure.
[Drawing 28] Drawing showing the flow of transfer condition verification procedure.
[Drawing 29] Drawing showing the flow of transfer certification verification procedure.
[Drawing 30] Drawing showing the flow of consumption condition verification procedure.
[Drawing 31] Drawing showing the flow of consumption certification verification procedure.
[Drawing 32] Drawing showing the flow of condition sufficiency certification verification procedure.
[Drawing 33] Drawing showing the flow of duplex use check procedure.
[Drawing 34] The functional configuration block Fig. of issue equipment.
[Drawing 35] The functional configuration block Fig. of transfer equipment.
[Drawing 36] The functional configuration block Fig. of inheritance equipment.
[Drawing 37] The functional configuration block Fig. of consumption equipment.
[Drawing 38] The functional configuration block Fig. of ticket gate equipment.

[Translation done.]